DIPLOMA IN REGISTERED NURSING

eLEARNING TRAINING PROGRAMME

COURSE TITLE: INTEGRATED REPRODUCTIVE HEALTH

COURSE CODE: IRH 023

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS AND ACRONYMS

AIDS: Acquired Immunodeficiency Syndrome
CA: Continuous Assessment
COCs: Combined Oral Contraceptives
DHMT: District Health Management Team
DVT: Deep Vein Thrombosis
EmONC: Emergency Obstetric and Neonatal Care
EMTCT: Elimination of Mother to Child Transmission of HIV
FP: Family Planning
HIV: Human Immunodeficiency Virus
ICU: Intensive Care Unit
IRH: Integrated Reproductive Health
MDGs: Millennium Development Goals
MoG: Ministry of Gender
MoH: Ministry of Health
MVA: Manual Vacuum Aspiration
PAC: Post Abortion Care
PMTCT: Prevention of Mother to Child Transmission of HIV
POPs: Progesterone Only Pills
PPTC: Prevention of Parent to Child Transmission of HIV
RH: Reproductive Health
SOU: Special Observation Unit
UN: United Nations
WHO: World Health Organization

COURSE INTRODUCTION

You are welcome to Integrated Reproductive Health (IRH) course. IRH is a full course which you learn in your second year of Nurse Training. This course aims at equipping you with the knowledge and skills necessary for providing services to clients with reproductive health needs. The course gives an overview of the introduction to Reproductive Health (RH), Safe Motherhood where the Anatomy and Physiology of both the Male and Female Reproductive Systems are discussed as well as management of clients in the Normal Perinatal Period and Emergency situations Gynaecology and Gynaecological nursing, Family Planning (FP) as well as Gender and Health will be discussed, where you will learn that the male folk should also be encouraged to seek RH Services, and should be equal partners with the female folk in Health matters.

IMPORTANCE OF IRH

The way the health system works in our country, Zambia is very dynamic. Due to staff shortages of various cadres who deal directly in RH as specialties such as Obstetricians, Gynaecologists and Midwives, you as a General Nurse can find yourself in a situation where you are alone at a facility without these specialised staff. Therefore you have to offer RH Services to clients and you must do so correctly in order to save lives, especially that Maternal and Child Health cases are very sensitive and delicate. Also the need to attaining the Millennium Development Goals (MDGs) number 3, 4, 5 and 6 pertaining to all these areas we have mentioned above cannot be over- emphasised, as Zambia is a signatory to this Declaration and Global Effort.

Therefore pay extra attention as we proceed with this course, I'm here to attend to all your questions and concerns and to provide guidance whenever you need it. I wish you all the best in IRH course.

COURSE AIM

This course aims at equipping you with knowledge and skills in Integrated Reproductive Health to enable you provide comprehensive services that will meet clients' health needs.

COURSE OBJECTIVES

At the end of this course, you should be able to;

1. Define the concept of Integrated Reproductive Health.
2. Discuss the components of IRH.
3. Manage clients using principles of PPTCT.
4. Identify problems associated with reproductive health.
5. Manage and prevent problems associated with reproductive health.
6. Identify and offer appropriate interventions to clients requiring EmONC

OVERVIEW OF COURSE CONTENT

This course has been apportioned into five (5) Units, each with related topics in order to assist you build on knowledge and skills progressively.

Unit 1: Concepts of Integrated Reproductive Health (IRH)

In this unit you will look at the definition of IRH, components of IRH, Integrated Reproductive Health Policy and the Principles of IRH.

Unit 2: Safe Motherhood (Obstetrics and Obstetric Nursing)

In this unit you will cover definition of terms, Components of Safe motherhood as well as the documentation done in Reproductive Health Departments. You will also learn about safe motherhood report formats at Facility, District, Provincial and National Levels. You will further learn the applied Anatomy and Physiology of Male and Female Reproductive systems, menstrual cycle, Female Breast and Embryology. Thereafter you will learn about Perinatal Physiology and Perinatal Care as well as the Medical disorders and complication therein. Finally you will learn about Emergency Obstetric and Neonatal Care as well as a brief overview of drugs used in Obstetrics. The detailed description of drugs used in obstetrics will be discussed in Pharmacology Course

Unit 3: Gynaecology and Gynaecological Nursing

In this unit you will learn the genesis of reproductive health period which is Menarche followed by Adolescent Reproductive Health and eventually Menopause. Thereafter investigation and procedures in Gynaecology will be discussed. Common disorders in Gynaecology will be discussed followed by Peri-Operative Care. A brief overview of Drugs used in Gynaecology will be done, with details about this in Pharmacology Course.

Consequently abortion and post abortal care will follow; other topics of discussion will be Ectopic Pregnancy, Vulvovaginal Infections as well as management of patients with Pelvic Infections. Furthermore you will learn about management of client with infertility problems, Fistulae and Tumours. Lastly but not the least cervical screening services will also be discussed.

Unit 4: Family Planning

This unit is entirely about Family Planning issues where we shall look at family planning overview, strategies for family planning and service delivery requirements. Finally the various family planning methods such as oral tablets, injectables, permanent methods and long acting contraceptives will be discussed in detail.

Unit 5: Gender and Health

As the heading entails, this unit will cover gender roles relations and life choices, effects of cultural, social, economic and political factors on Women's and Men's Reproductive Health. Consequently Gender Based Violence as well as Sexual and Reproductive Health Rights will be discussed. Issues of Gender Mainstreaming in the Health Sector and elimination of all

forms of discrimination against Women Declaration will be discussed, winding up with Integrated Reproductive Health Nursing.

LEARNING TIPS

At this point in time I provide you with the following tips as you learn IRH, just to enlighten you and make your study easy and feasible.

COURSE DURATION

You are probably wondering how long this course will take, considering the amount of content it has when you look at the table of contents.

This course is a full course, meaning that you will learn it for a full year before writing the end of year examination for your second year of nurse training. The total course hours add up to five hundred and sixteen (516), out of which ninety six (96) hours will be meant for learning theory, while four hundred and twenty (420) will be meant for the practical sessions.

Therefore divide the units by yourself for studying in such a way that all will be covered within one academic year, the General Nursing Council of Zambia advise that you utilise six (6) hours per week for the first six months and six (6) hours per week for the second six months, balancing the hours allocated for both theory and practice per each week

ACTIVITIES, SELF-HELP QUESTIONS AND CASE STUDIES

Throughout this course are activities, self-help questions and case studies, as part of a well designed e-learning programme. These are projected to help make the learning more active and effective, as you progress and apply what you read. They will also help you to connect with ideas and check your own comprehension of the content. It is important that you take time to complete them in the order that they occur in the course without referring to the answers first, but you can check how well you have scored because answers for these questions are provided later after the questions.

FURTHER READINGS

There is a list of References or Further Readings at the end of each unit that comprises books and articles that were used as sources of information in the course and are suggestions in case you wish to look up topics further. You are urged to read and consult as widely as possible during and after the course.

CLINICAL ALLOCATIONS AND EXPERIENCE

Your Course Coordinator will allocate you at appropriate times to Antenatal Wards or Departments, Labour ward, Gynaecological ward, ICU or Special Observation Unit (SOU), postnatal ward/Clinic, Community and at Health Centres. You will also be allocated to Operating Theatre and Family Planning facilities all to gain the experience needed.

DELIVERABLES

During the period of undertaking and practicing this course you are expected to meet certain milestones, write comprehensive write-ups and deliver them for marking. You will be expected to deliver the following write-ups one after another in this order:

- Antenatal Examination – 5
- Deliveries Observed – 10
- Conducted Deliveries – 5
- Postnatal Examinations – 5
- Examination of the Newborn at Birth – 5

All the above mentioned deliverables must be countersigned and approved by a Qualified Nurse/Midwife working in the respective department where the deliverable was done or observed, and patients' records must not leave the department

where they are kept. This should be so in order to respect client privacy, foster confidentiality and to avoid legal implications.

ASSESSMENTS

In order to assess progress on your acquisition of knowledge and skills in IRH, you will be assessed in both Theory and Practical as follows:

Theory Assessments

You will be given two (2) tests worth 20%, you will be required to write one (1) Case Study worth 20 % as Continuous Assessment (CA), making Total of Forty (40) % for CA. The Final IRH Theory Examination will comprise sixty (60) %.

Take Note: Timely submission of assignments is important and will be beneficial on your part as the learner.

Practical Assessments

You will be assessed in two (2) Clinical Assessments for Continuous Assessment worth twenty (20) % each and total of forty (40) % for both CAs. There will also be one final practical examination, worth sixty (60) %.

I therefore wish you all the best as you endeavour to attain good grades in IRH, based on this well defined and well researched content.

UNIT 1: INTRODUCTION TO INTEGRATED REPRODUCTIVE HEALTH (IRH)

1.1 Introduction

You are welcome to unit 1 of our course 'Integrated Reproductive Health (IRH). This unit covers the definition and components of IRH, Reproductive Health Policy, and the Principles of IRH. The session will be interactive, and will be more interesting with your full participation.

1.2 Objectives

At the end of this Unit, you should be able to;
1. Define Reproductive Health and Integrated Reproductive Health.
2. Explain the components of Integrated Reproductive Health.
3. Describe the Integrated Reproductive Health Policy.
4. Outline the Principles of Integrated Reproductive Health.

1.3 Definition of Terms

Before you know the definition of Integrated Reproductive Health, it is worthy for you to first understand the definition of Reproductive Health according to MoH, 2003. This will help you understand Integrated Reproductive Health.

- **Reproductive Health -** is a state of complete physical, mental and social wellbeing and not merely the absence of reproductive disease or infirmity.
- **Reproductive health** is defined as a state of physical, mental, and social well- being in all matters relating to the reproductive system, at all stages of life.

Reproductive health**,** implies that people are able to have a responsible, satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so.

Integrated Reproductive Health (IRH) This is a comprehensive approach to Reproductive Health in a response to expanding needs arising from; increased demand for family planning, greater awareness of maternal and neonatal mortality and morbidity, and a growing burden of reproductive ill health (MoH, 2003).

Self Assessment tests

1.4 Components of IRH

The components of IRH include the following:-

A. Reproductive health information

- To enhance reproductive health information and service provision so that all individuals and couples will be able to achieve their reproductive intentions while upholding their reproductive rights.
- To strengthen the concept of Integrated Reproductive Health through advocacy and Information Education Communication (IEC) so as to ensure sustainability of Integrated Reproductive Health programmes.

B. Safe motherhood

- To ensure the provision of quality Integrated Safe Motherhood Services which are accessible, acceptable and free at all levels of the health care system.

C. Family planning

- To ensure that procurement of family planning commodities are made on a sustainable basis.
- To ensure that provision is made for production and distribution of IEC

D. Maternal nutrition

- To ensure that the nutritional status of women and adolescent girls in particular, is improved to prevent health problems

E. Adolescent health and development

- To empower adolescents/youth by equipping them with life skills, including assertiveness, self-esteem, value clarification and decision making in order to achieve a positive life attitude.
- To increase accessibility and availability of affordable Youth Friendly Health Services to adolescents/youth at all levels of the health care system.

F. STIS/HIV/AIDS

- To strengthen the prevention and effective management of STI/HIV/AIDS.
- To reduce the rapid spread of HIV/AIDS.

G. Abortion

- To strengthen the quality and availability of Post Abortion Care (PAC) and counseling services within the context of Integrated Reproductive Health.

H. Infertility

- To ensure the provision of appropriate services for overcoming infertility barriers to the achievement of reproductive intentions.

I. Health service delivery

- To ensure the provision of quality reproductive health services at all levels of the health care system.

J. Other reproductive health issues

- To strengthen diagnosis and management of all related reproductive health cancers at all levels of health care system (cancer of the cervix, breast and prostate).
- To ensure that there is a preventive and curative programme for women after menopause.
- To prevent harmful traditional practices, such as female genital mutilation and unsafe male circumcision.

Activity
In your own words define Integrated Reproductive Health, practice over and over at least 4 times.

Well done, keep it up. Now that you have known the definition of IRH by heart, you can proceed to the next topic.

Self Assessment tests

1.5 Integrated Reproductive Health Policy

The reproductive health policy was formulated by the Ministry of Health to provide guidelines to different sectors involved in the implementation of reproductive health programmes.

The policy sets out to respond to the country's prevailing reproductive health situation so as to improve the standard of living and quality of life of Zambians.

The Reproductive Health Policy provides guidelines to different sectors involved in the implementation of reproductive health programmes. The policy sets out to respond to the country's prevailing reproductive health situation so as to improve the standards of living and quality of life of Zambians.

The policy commits itself to addressing the reproductive health needs of individuals and families, as well as supporting their physical, mental, emotional and social development throughout their life cycle. The policy also commits itself to the concept of Reproductive Health, which encompasses, safe Motherhood, including Safe Abortion care, Family Planning: Adolescent Health, STIs/HIV/AIDS, and Gender issues throughout the life of individuals, within the context of population and sustainable development, and reduction of poverty.

Furthermore, the policy is committed to advocating for a multi-sectoral approach to reproductive health by involving other government Ministries, Non-Governmental Organization, Politicians, Policy makers, senior managers, the Community, Church organizations and other concerned bodies and users of services.

Reproductive Health Policy Vision

To achieve the highest possible level of integrated reproductive health of all Zambians as close to the family as possible so as to promote quality of life

Guiding Principles of the Reproductive Health Policy

- Creating an enabling environment, for the provision of reproductive –Health services, by effective management, training, supervision, essential logistic supplies, infrastructure, and referral system.
- Guaranteeing that all public and private health facilities will provide the essential Reproductive Health services to all in consistence with the level of experience and training of service providers.
- Providing Reproductive Health information and services to all regardless of age, gender, and marital or socio-economic status.
- Taking into account the religious, social and cultural factors in the provision of sexual and reproductive health information and services in the various communities and groups of people.
- Protecting the rights of the clients in the course of obtaining appropriate medical information and services and ensuring maximum confidentiality and privacy.
- Strengthening existing pre-service, in service and post graduate training on reproductive Health, and ensuring regular updates according to staff performance and establishing appropriate infrastructure to meet the service provision requirements.
- Involving traditional practitioners/healers in the promotion of safe practices for all aspects of sexual and reproductive health (MoH, 2000)

Self Assessment tests

1.6 Principles of IRH

Integrated Reproductive Health has 12 principles which are as follows:-

a. Community Participation

Community participation is essential at all stages to ensure acceptability, appropriateness and sustainability of RH programmes. It is necessary for empowering the community, particularly women, to have greater control over their lives and

over the services that are provided to them. It is through community participation that essential information will be gathered to direct the planning of services. Such information includes:

- Identification of the training needs of care providers.
- Selection of appropriate sites to avoid stigmatisation of users. Analysis of the appropriate level of privacy and confidentiality required by local customs, cultures or beliefs.
- Decisions on whether primarily female staff must be used; and recognition of birthing preferences.
- A failure to obtain such information may have a negative impact on the use of services, for example, if family members are excluded from a birth when they have an important cultural role to play at such times. It is important that both men and women be involved in many aspects of the RH programme to promote responsible and caring attitudes and behaviour for the benefit of all.
- Although men may be poorly informed about RH matters, they are often the decision makers. Health providers need to be aware of the roles and decision-making process within the family so they can provide services effectively and in the best interests of the whole family.

b. **Quality of Care**

Quality RH services require that organisations, programmes and providers use appropriate technologies and have trained staff. There is also need to respect clients' rights to informed consent by providing adequate information and counselling, Reproductive Health Care providers must ensure accessible services, privacy, confidentiality, and continuity of care. These aspects of quality of care are also guiding principles of medical ethics in the protection of human rights.

a. **Appropriate Technologies and Skills**

Appropriate technologies must be selected according to universal standards. Providers must be adequately trained, equipped and supervised. Appropriate supplies must be available, clean, and, when necessary, sterile. All invasive procedures must involve Infection Prevention (IP) and proper use of drugs.

d. Accessibility

Primary Health Care (PHC) services must be available within a reasonable distance from all patients (at least within 12Km radius). A referral network, including transportation, to higher-level facilities should be coupled to PHC services. Patients' access to services should not be contingent (depended) on social or cultural backgrounds nor on age, marital status, parity, number of male children, sexual orientation, or partner or parental consent. Patients should not be required to accept one service in order to gain access to another type of service.

e. Informed Consent

A patient has the right to know, before any procedure is performed, what the procedure involves as well as its expected benefits, possible risks, duration of treatment, and cost to the patient or her/his family. This information must be presented to the patient in a language that s/he can understand. Informed consent means that the patient not only has choices, but also can make an informed decision among various options. To make such a decision, the patient must know her/his condition and have ample opportunity to ask questions and receive answers from a knowledgeable provider.

f. Privacy

Visual and auditory privacy must be maintained during all phases of patient care, that is, from presentation through diagnosis, testing, treatment, and counselling. Examination tables should face away from doors and windows so that a woman will not risk exposure during examination, particularly during pelvic examination. Windows should be covered, and partitions placed between examination areas. Others within the health facility should not be able to overhear the interaction between the patient and health provider.

g. Confidentiality

All information regarding the patient, her/his history, treatment, condition, circumstances, and prognosis is discussed only between the patient, the provider and supervisors. No staff member should share patient information with anyone who is not directly involved in the patient's care without the patient's permission (shared confidentiality). Medical records should be stored in a locked room or file cabinet to which only providers and supervisors have access. Medical records should never leave the clinic unless required for patient referral to another clinic.

h. Respect

All health staff should talk with patients politely and manage patient care in a compassionate and non-judgmental fashion. Patients have the right to ask questions and expect those questions to be answered in a timely, complete and understandable manner. Patients need to know how to recognise and manage common complications of their condition, signs and symptoms indicating the need for additional medical attention and when and how to obtain follow-up care.

i. Integrating Services

Reproductive health services should be integrated into primary health care. Integration may occur in relation to the place at which services are provided or the personnel who provide those services. The potential to integrate services provided at any particular site will depend on the skills and resources available. Successful integration is dependent on the quality of communication among the various personnel, at different levels, within the overall service. All personnel must be fully aware of how the system operates, what services are provided at each level, and how those who want to use the services can do so. The staff at one level must be able to provide information about all other levels. When referrals are made between levels, adequate information about the patient must travel in both directions and must cover both the reasons for a referral and the eventual consequences of any action taken.

j. Information, Education and Communication (IEC)

Reproductive health requires knowledge and understanding about human sexuality and appropriate, adequate and accessible information. It is important to raise the level of knowledge about reproduction and sexuality. Women, men and adolescents should understand how their bodies work and how they can maintain good reproductive health. Scientifically validated knowledge should be shared to promote free and informed choice and to counter misperceptions and harmful practices. IEC activities are essential for sharing this knowledge. Such activities range from “one-to one” conversations between service providers and clients to highly developed formal campaigns. There are also effective IEC strategies that promote community participation and individual commitment to changing behaviours.

k. Advocacy for Reproductive Health

The active promotion of reproductive health should be part of all communities’ assistance programmes. A lack of awareness of the issues involved in protecting and promoting reproductive health may be found in all groups involved in a community setting, from the providers of health care to the community they serve. This lack of awareness may become a real barrier to improved reproductive health and responsible sexual behaviour. However, opportunities to promote RH issues may be limited. Any advocacy that is undertaken must demonstrate understanding of the culture, values and belief systems of the local population. Advocacy that is insensitive or disrespectful may be counterproductive and prompt rejection, or even reprisals, within the community.

l. Coordinating activities among relief agencies

Coordination is needed among sectors (health, community services, protection), implementing agencies (government, NGOs, UN agencies), Levels of service providers (Doctors, Midwives, Traditional Birth Attendants, health assistants). To foster this coordination, it is recommended that an individual be identified as RH Coordinator in each community situation. This person would assume the responsibility for overall organisation and supervision of RH activities, as well as the integration of these services within other health services. The issue of sexual violence provides an excellent illustration of the need to coordinate among sectors. To deal with the causes and consequences of violence, health professionals must work closely with staff in the protection and community services sectors. By doing so, staff can develop detailed procedures on appropriate care for survivors and strategies to prevent the occurrence of sexual violence. Coordination among implementing agencies requires that, although each agency has its own expertise and range of qualified staff, there should be a standard approach used by all agencies involved. Even though an agency may not provide a full range of RH services, coordination with others would ensure that the end product is complementary and comprehensive RH care. Uncoordinated activities result in inappropriate allocations of scarce resources and reduced impact of the project.

Self Test

Please attempt to answer the following questions. In order to assess your comprehension. All the

best as you do so.

1. Integrated Reproductive Health entails offering Reproductive Health Services to…
   a. Women of child bearing age
   b. Women and under five children only
   c. Men , women, adolescents, youth and children
   d. Pregnant women only
2. The following are components of IRH **EXCEPT……..**
   a. Reproductive Health Information
   b. Safe Motherhood
   c. Maternal Nutrition
   d. Appropriate Technologies and Skills
3. The following are Principles of IRH **EXCEPT**……..
   a. Adolescent Health and Development
   b. Quality of Care
   c. Accessibility
   d. Community Participation

Answers : Q1-C, Q2-D, Q3-A

1.7 Summary

This is the end of unit 1. In this unit you covered the definition of both Reproductive Health and Integrated Reproductive Health and went on to look at the components of IRH. You also looked at the reproductive health policy and its guiding principles. Find time to go through the work you have covered in unit one so that you can understand the content well. You are welcome to consult me in case of concerns that need to be addressed. In the next session I will introduce unit 2 which covers a component of safe motherhood. This unit will be a build up on unit 1.

1.8 References

CBOH (2002) **Integrated Technical Guidelines for Health workers in Zambia**

Fraser and Cooper (1996) **Text book for midwives.** 12th ed, Edinburgh: Churchill Livingstone

MOH (2000) **Reproductive Health policy**. Ndeke House, Lusaka.

WHO (1998) **Reproductive Health Services During Conflict and Displacement: Guidelines for the Design and Management of Reproductive Health Programmes,** Geneva.

World Health Organization (2008). **Medical eligibility criteria for contraceptive use**. Geneva: Available on http://www.who.int/reproductivehealth/ publications/family planning/9241562668index/en/index.html. Accessed on 6th February, 2015

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UNIT 2: SAFE MOTHERHOOD (OBSTETRICS AND OBSTETRIC NURSING)

2.1 Introduction

Welcome to unit 2 of our course 'Integrated Reproductive Health.' This unit covers the components of Safe Motherhood, Obstetrics and Obstetric nursing. Understanding of this unit will be made easy if you understood the content in unit 1 perfectly. I therefore urge you to pay particular attention and participate actively as you do always.

2.2 Objectives

By the end of this unit you should be able to:

1. Define the terms used in Safe Motherhood
2. Identify the components of safe motherhood
3. Describe the documentation of various safe motherhood information
4. Describe the procedure of producing safe motherhood reports at facility, district, provincial and national levels
5. Describe the applied anatomy and physiology of male and female reproductive systems.
6. Explain the menstrual cycle
7. Illustrate the female breast.
8. Describe the process of fertilization and fetal development
9. Describe the physiology of pregnancy.
10. Describe the management of a client with minor disorders in pregnancy.
11. Explain the provision of antenatal care.
12. Explain the implementation of PPTCT package as well as implementation of the Option B+/EMTCT.
13. Explain the management of normal labour.
14. Describe immediate management of the new born baby and its related problems.
15. Describe the provision of immediate postpartum care.
16. Describe the provision of postnatal care
17. Describe the management of various medical disorders in pregnancy, labour and puerperium.
18. Explain the provision Emergency Obstetric and Neonatal Care (EmONC)
19. Describe the management of Obstetric complications.
20. Describe the management of women undergoing difficult labour as well as their Peri-operative care.
21. Explain the various Drugs used in Obstetrics.

2.3 Definition of Terms Used in Safe Motherhood

The following are terms that are worth knowing before we proceed with this unit. These are Safe Motherhood, Conception, Pregnancy, Fertilization, Embryo and Foetus.

Activity

Define the following words in your note book:

1. Safe Motherhood.
2. Conception.
3. Pregnancy.
4. Fertilization.
5. Embryo.
6. Foetus.

Very good, impressive work so far. Now compare your answers to this activity with the following information.

1. **Safe motherhood**

Safe motherhood encompasses a series of initiatives, practices, protocols and service delivery guidelines designed to ensure that women receive high-quality gynecological, family planning, prenatal, delivery and postpartum care, in order to achieve optimal health for the mother, foetus and infant during pregnancy, childbirth and postpartum.

2. **Conception:** This is the state of undergoing fertilisation and successful implantation of the conceptus.
3. **Pregnancy:** The condition of having a developing embryo or foetus in the body, after union of an oocyte and spermatozoon.
4. **Fertilisation**: This is the fusion of the male gamete (Spermatozoon) and the female gamete (Ovum) to form a Zygote.
5. **Embryo:** This word is used to describe the period from 22 days to eight weeks of the baby's development after conception.
6. **Foetus:** This term is used to refer to the developing conceptus from nine weeks up to term.

Self Assessment tests

2.4 Components of Safe Motherhood

The following are the components of Safe Motherhood you need to know according to WHO, 1994.

1. Family Planning - to ensure that individuals and couples have the information and services to plan the timing, number, and spacing of pregnancies and to prevent unwanted pregnancies.

2. Antenatal care - Effective antenatal care is essential to detect pre-existing conditions, to provide vitamin supplements, vaccinations, and screen for risk factors in order to prevent complications where possible, and to ensure that complications of pregnancy are detected early and treated appropriately.

3. Intrapartum care - to ensure that all birth attendants have the knowledge, skills, and equipment to perform a clean and safe delivery, and to ensure that emergency care for high-risk pregnancies and complications is made available to all women who need it.

4. Postnatal care - to ensure that postpartum care is provided to mother and baby, including lactation assistance, provision of family planning services, and managing danger signs.

5. Post abortion care - to prevent complications where possible and ensure that complications of abortion are detected early and treated appropriately, to refer other reproductive health problems, and to provide family planning methods as needed.

6. STIs/HIV/AIDS Control - to screen and prevent transmission to baby, to assess risk for future infection; to provide voluntary counselling and testing; to encourage prevention; and where appropriate to expand services to address mother to child transmission.

Self Assessment tests

2.5 Documentation of Safe Motherhood Information

Information collected during IRH activities is documented in the following activity sheets and registers:

1. Child health activity sheet
2. Antenatal/ Postnatal Services activity sheets
3. Family planning activity sheet
4. Obstetric care activity sheet
5. PMTCT activity sheet
6. Family planning register
7. Safe motherhood register
8. Delivery register
9. Under five register

Take Note:

If you have not documented "IT", then you have not done "IT". Therefore appropriate documentation is very vital at every level of service in this field of practice and it is evidence of things done and not done

Self Assessment tests

2.6 Safe Motherhood Report Formats

A. Facility level

At this level of care two forms are used for reporting to the District level:

1. Health institution aggregation form. (HIA.1) - This form is for recording diseases
   Disease aggregation form HIA.1 is filled at health institution on monthly and quarterly basis.
2. Health institution aggregation form 2 - (HIA.2) Form- Used for recording services.
3. Tally sheets are an easy way of counting (tallying) identical data on conditions that do not have to be followed up such as headcounts, minor ailments and children weighed. This data helps to understand the frequency of a condition and number of services provided. But it's not useful in follow up or public health activities. There are 2 tally sheets:

- Service Delivery Tally sheet which is filled out at the time of patient contact(attendance)
- Diagnoses Tally sheet filled out on daily basis.

B. District level

At this level consolidated HMIS databases are used for reporting to the Provincial level.

C. Provincial level

Like at the District level, consolidated HMIS database are used to process the data for analysis

D. National level

The consolidated HMIS data is analysed and used for decision and policy making. (MoH, 2009)

Self Assessment tests

Self assessment Test

1. List any three components of safe motherhood
   Answers
   Antenatal care
   Family planning
   Postnatal care
2. Mention five (5) activity sheets that are used in safe motherhood Child health activity sheet

Answer

- Antenatal/ Postnatal Services activity sheets
- Family planning activity
- PMTCT activity sheet
- Family planning register
- Delivery register

2.7 Applied Anatomy and Physiology of Male and Female Reproductive Systems

The reproductive system or genital system is a collection of organs within an organism which work together for the purpose of reproduction. Many non-living substances such as fluids and hormones are also important accessories to the reproductive system.

The major organs of the human reproductive system include the external genitalia (penis and vulva) as well as a number of internal organs including the gamete producing gonads (testicles and ovaries).

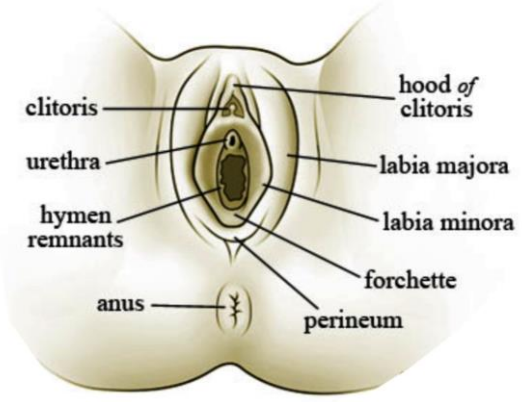
Knowledge about the make-up and functions of the male and female reproductive systems is important to nursing practice because the nurse will be able to relate to the anatomy and physiology in order to recognise the normal and deviations from normal. The nurse needs to be familiar with the anatomical features of the reproductive systems and also understand the processes of reproduction.

Activity:

Get your note book and sketch the Female External Genitalia and Female Internal Genitalia with clear labelling of the parts you can Remember.

That is a very good attempt, you are indeed learning fast. With more practice your diagrams will certainly improve. Now compare your diagrams with the following information and illustrations.

In



Female Reproductive Organs

this section you are going to look at the external genitalia as well as the internal genitalia.

External Genitalia

Figure 1: Diagram showing the external female genitalia

This consists of:

- Mons pubis (mons veneris):- this is a fatty pad tissue over the pubic bone. After puberty it is covered with hair.
- Labia majora (Outer Lips):- there are two folds of fat and arealor tissue, covered with skin and pubic hair on the outer surface. They extend from the mons veneris to the perineum where the two lips merge behind.
- Labia minora (Inner lips):- are two thin skin folds lying between the labia majora. Anteriorly they divide to enclose the clitoris.
- Clitoris:- It is a small organ corresponding to the male penis located at the very top of the inner lips. It is highly vascularized and most sensitive part of the female genitalia.
- The urethral orifice: - the external opening of the urethra which lies about 2.5 cm posterior to the clitoris.
- The vaginal opening: - It is the entrance to the vagina and it is partially closed by the hymen, a thin membrane which tears during sexual intercourse or during birth of the first child.
- Perineum: - It is the triangular area, which is found posterior to labia minora and anterior to the anus.
- Bartholin's glands: - these are two small glands which open on either side of the vaginal opening and lie in the posterior part of labia majora. Sometimes these glands become infected.

Internal Female Genitalia

The following is an illustration of the Female Internal Genitalia.

Figure 2: Diagram showing the internal female genitalia

The Internal female genitalia consist of:

1. **Vagina: -** It is elastic, muscular passage, which lies between the vaginal opening and cervix. It is about 10cm long. The vagina is the female organ of sexual intercourse. It is also a passage for fetal delivery and menstrual blood flow.
2. **Cervix: -** It is part of the uterus, which is situated at the lower end of the uterus protruding into the upper vaginal canal. The opening of cervix is called the cervical os. The opening has glands responsible for lubricating the vagina.
3. **Uterus:-** The uterus or womb is a muscular pear shaped organ in the pelvis, situated behind the bladder and in front of the rectum. It leans forward (anteversion), bends forwards on itself (anteflexion). During pregnancy the uterus shelters, supports and nourishes the growing foetus. It prepares for pregnancy each month; following pregnancy it expels uterine contents.
4. **Fallopian Tubes (oviducts):-** There are two fallopian tubes, which extend from the top of each side of the uterus. The fallopian tubes are muscular channels of about 10cm long with ciliated canal that helps in the movement of the ova from the ovary to the uterus. Fertilization takes place in these tubes. There are four parts of the fallopian tube from the ovary to the uterus, that is, the fimbria, infundibulum, ampulla - where the ovum is fertilized and the isthmus
5. **Ovaries: -** There are two ovaries each of which is attached by ligaments to each side of the uterus. They are the principal structures of the female reproductive system. Each ovary produces thousands of follicles; these follicles produces female sex hormones known as oestrogen and progesterone, which are released into the blood stream and responsible to the thickening as well as maintaining of the lining of the uterus in preparation for the implantation of the fertilized egg (Sellers, 2010).

Male Reproductive Organs

The male reproductive system also has the External and Internal genitalia. Take a look at the illustration below;

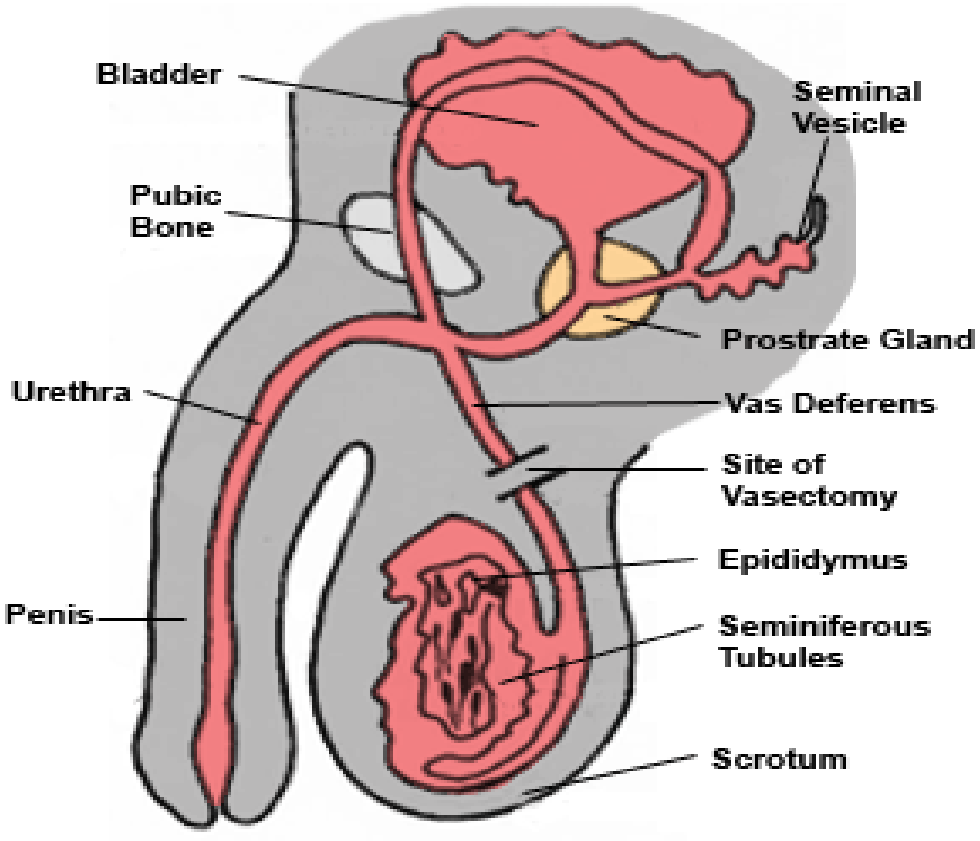


Figure 3: Diagram of the Male genitalia

The Male External Genitalia

These are the male organs that are specialized in producing and maintaining male sex cells or sperm cells, to transport these cells together with various supporting fluids to the female reproductive tract; and to secrete male sex hormones.

- Scrotum: - The scrotum is a sack of skin, which forms a pouch in which the testes are suspended outside the body. It lies behind the penis and between the thighs.
- Penis: - The penis is the primary organ of male reproduction and consists of erectile (cavernous) tissue having the urethra centrally. Its primary function is in sexual intercourse
- Testes: - The testis is a glandular organ situated in the scrotum. For their proper function they should be kept below the body temperature that is why they are suspended outside the body. They are responsible for the production of spermatozoa and testosterone.

The Male Internal Genitalia

The internal male sex organs are glands and tubes. The following are the internal structures of the Male Reproductive Organs:

- Semniferous tubules: They are part of tests where spermatogenesis (production of sperm) takes place. These tubules joint to form a system of channels, which lead to the epidedymis.
- Epididymis: This is a coma shaped coiled tube, which lies on the superior – posterior aspect of the testis. It helps for storage and maturation of spermatozoa. It leads into vas deference.
- Seminal vesicles: They are two long narrow tubes, which carry the sperm from each epidermis to the seminal vesicle.
- The ejaculatory duct: - These are muscular ducts that transmit permatozoa and seminal fluid in to the urethra.
- The prostate gland: - It is a structure, which surrounds the urethra at the base of the bladder. It produces a thin lubricating alkaline fluid that helps sperm motility and neutralizes the acid in the male's urethra and the female's vagina.

- Urethra: - It is a tube, which connects bladder, prostate, and seminal vesicles to the external opening on the penis. It is a passage for both semen and urine (Fraser & Cooper, 2003).

Self Assessment tests

2.8 The Menstrual Cycle

The menstrual cycle is a series of cyclic events that take place in a rhythmic fashion during the reproductive period of a woman's life. It starts at the age of 12-15 years which marks the onset of puberty (Menarche). It ceases at the age of 45-50 years (Menopause). Although each woman has an individual cycle which varies in length under physiological conditions between 20-40 days, the average cycle is taken to be 28 days long and recurs regularly from puberty to the menopause except when pregnancy intervenes. The first day of the cycle is the day on which menstruation begins.

Changes during the Menstrual Cycle

We are now going to describe the menstrual cycle as propounded by Marieb, 1989. The changes are divided into 4 groups namely:

i. Ovarian changes
ii. Uterine changes
iii. Changes in the cervix
iv. Vaginal changes

The above changes all occur simultaneously

1. Ovarian changes during menstrual cycle

The changes in the ovary occur in 2 phases, namely;

i. Follicular phase: During this phase, one follicle in the ovary begins to mature due to the influence of Follicle Stimulating Hormone (FSH). This FSH is released by the anterior pituitary gland after getting stimulation from the Hypothalamus hormone Gonadotropin Releasing Hormone (GnRH) as a result of the positive feedback received from the ovary. As the follicle is maturing (graafian follicle), it is releasing large amounts of Oestrogen and little amounts of Progesterone from the granulosa cells of the developing follicle. This phase corresponds to the proliferative phase in the uterine cycle. On the 14th day of the cycle, the grafiaan follicle is ready for ovulation. Ovulation is the process in which there is rupture of graafian follicle with consequent discharge of ovum into abdominal cavity after maturity of follicle, leaving behind the corpus luteum, the yellow body that secretes a lot of progesterone and little oestrogen.

ii. Luteal phase: During this phase, the corpus luteum secretes a lot of progesterone that is responsible for the Secretory developments in the endometrium. This phase corresponds to the Secretory phase in the uterine cycle, and is under the influence of Leutenising Hormone (LH). The Corpus luteum is responsible for maintaining pregnancy before full placental function should fertilization occur. If fertilization does not occur, a negative feedback is sent to the Hypothalamus to stop producing the LH.

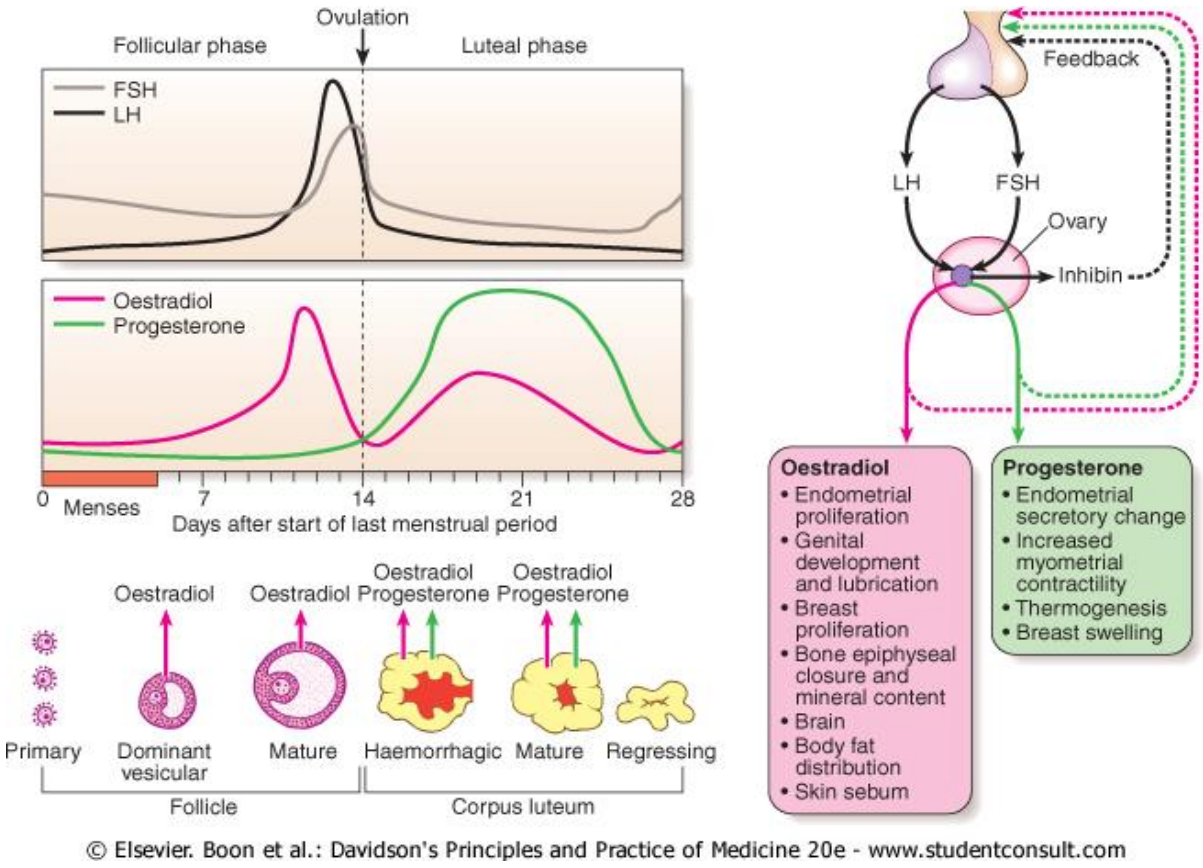


Figure 4: Diagram illustrating the menstrual cycle

2. Uterine changes during menstrual cycle

There are three main phases in this cycle which are controlled by the ovarian hormones.

i. The Menstrual phase: - It is characterized by vaginal bleeding and lasts for three to seven days. In this phase the endomethium is shed down to the basal layer along with blood and the unfertilized egg.

ii. The Proliferative phase: - This phase follows the menstruation phase and lasts until ovulation, around the 14th day. This phase is under the control of oestrogen and consists of the regrowth and thickening of the endometrium.

iii. The Secretory phase: - This phase follows ovulation, (progesterone and androgens) Progesterone dominates this phase of cycle and prepares the endometrium to receive the fertilized ovum if fertilization occurs. If fertilization does not occur the endometrium sheds again and enters the menstrual phase.

The Cervical and Vaginal changes are not so pronounced, corresponding to the proliferative and secretory phase of the uterine cycle (Marieb, 1989).

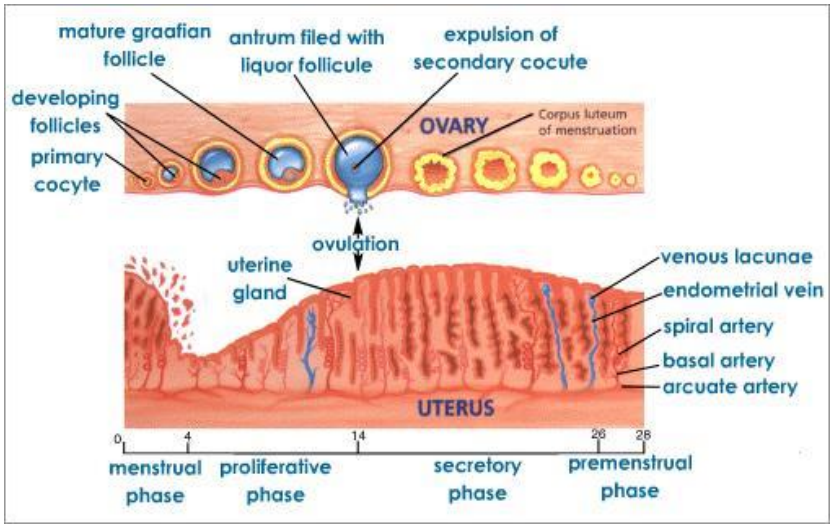


Figure 5: Diagram illustrating the menstrual cycle

Self Assessment tests

2.9 The Female Breast (Mammary Glands)

Nurses who fully understand lactation and the importance of human milk for human babies are likely to be highly motivated to acquire the skills necessary to support women who choose to breastfeed, and to avoid practices that lead to breastfeeding failure. Therefore, it is important for nurses to have knowledge on the structure of the female breast, physiology of lactation and care of the breast.

Gross Structure of the Breast

The illustration below shows the gross structure of the female breast;

The female breasts are accessory organs of reproduction, and are also known as mammary glands. They are situated one on each side of the sternum and extend between the levels of the second and sixth rib. They lie in the superficial fascia of the chest wall over the pectoralis major muscle, stabilized by suspensory ligaments. Each breast is hemispherical in shape, and has the axillary tail of Spence which is a tail of tissue extending towards the axilla. Breast size varies with each individual and with the developmental stage and age. It is not uncommon for one breast to be a little larger than the other. The areola is a circular area of loose, pigmented skin at the centre of each breast, about 2.5 cm in diameter. The colour varies in different races and deepens with pregnancy. About 20 sebaceous glands lie within the areola area. In pregnancy these enlarge and are known as Montgomery's tubercles. In the centre of the areola lies the nipple, at the level of the 4th rib. This is a protuberance of about 6mm in length, composed of pigmented erectile tissue covered in skin. The surface of the nipple is perforated by small orifices which are openings of the lactiferous ducts.

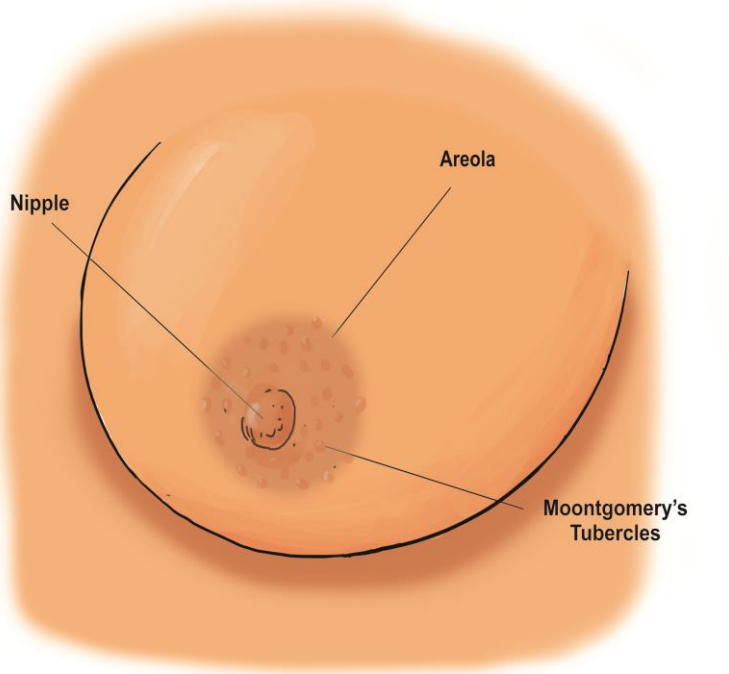


Figure 6: Gross structure of the female breast

Microscopic structure of the breast

Now let us consider cutting the breast longitudinally to view the internal microscopic structures as follows;

The breast is composed mainly of glandular tissue but also has fatty tissue. Glandular tissue is divided into about 18 lobes seperated by bands of fibrous tissue. Each lobe is divided into lobules that consist of alveoli and ducts. Each alveolus is lined by milk-secreting cells known as acini cells. Around each alveolus lie myoepithelial cells sometimes known as basket or spider cells, which when stimulated by oxytocin contract releasing milk into the lactiferous duct. Small ducts known as lactiferous tubules connect the alveoli. The lactiferous duct is a central duct into which the tubules run. The widened-out portion of the duct where milk is stored is called the ampulla, lying under the areola.

There is a continuation of each lactiferous duct extending from the ampulla, opening on to the nipple. Blood supply to the breast is by the internal mammary artery, external mammary artery and upper intercostal arteries. Venous drainage is through corresponding vessels into the internal mammary and axillary veins. The lymphatics of the breasts communicate with each other. Drainage is largely into the axillary glands, some drainage into the portal fissure of the liver and mediastinal glands. Branches of the thoracic nerve supply the skin, plus some sympathetic nerve supply especially around the nipple and areola (though breast function is largely controlled by hormonal activity).

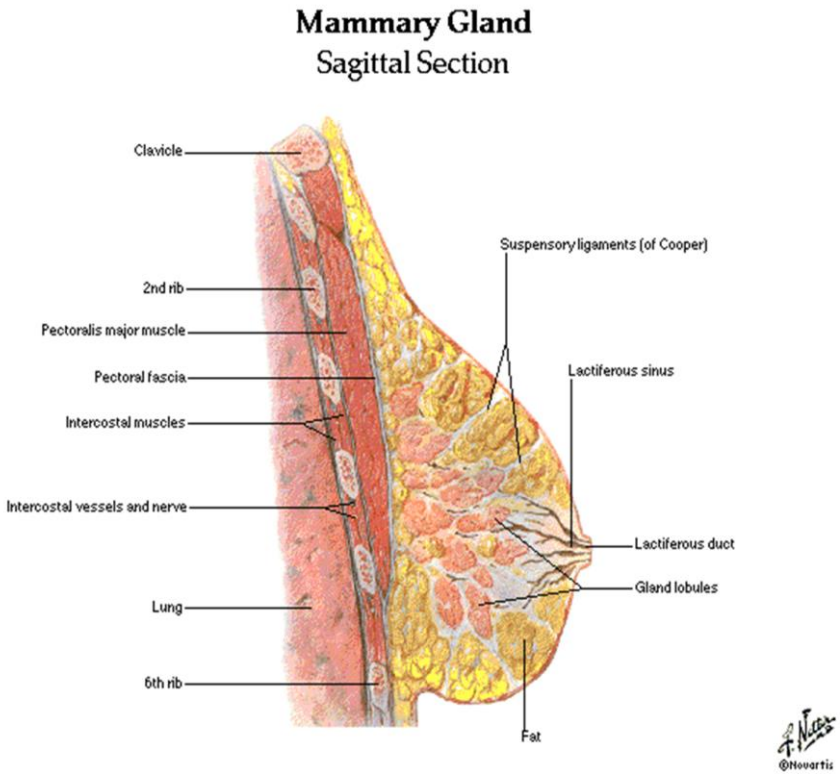


Figure 7: Diagram showing the cross section of the female breast

Activity Get your note book again. Write down the meaning of fertilization

That is very good attempt. Compare your answer with what is given in the next lesson.

2.10 Fertilization and Foetal Development

Fertilization is the process by which the male and female gametes unite to form a fertilized cell called the zygote leading to the development of a new individual. (Sellers, 2010).The ovum is propelled into the fallopian tube by the action of the cilia and the peristaltic muscular contraction of the tube and fertilization takes place in the ampulla which is one of the parts of the uterus. Fertilization can be internal, external and in-vitro. However, we will focus on the internal fertilization which occurs in the ampulla of the fallopian tube after union of the sperm and the ovum.

Under this topic there are some terms that you need to understand before we go in a detailed discussion

The following terms are derived from Fraser & Cooper, 2003 and Sellers, 2010 among other books which will help you understand the content in this section:

a. Amniotic Fluid (LIQUOR AMNII) - This is a clear pale straw coloured alkaline fluid which fills the amniotic sac, (Sellers, 2010).

b. Blastocyst - It is a fluid filled cavity which appears in the morula which is formed by the fourth day after fertilization, (Sellers, 2010).

c. Decidua - This is the name given to the uterine lining (endometrium) during a pregnancy, (Fraser & Cooper, 2003).

f. Morula - This is an early stage of development of the ovum when it is a solid mass of cells. (Sellers, 2010).

g. Ovum - This is the reproductive cell of the female. (Sellers, 2010).

h. Placenta - This is a vascular structure inside the pregnant uterus supplying the fetus with nourishment through the connecting umbilical cord. (Verrals, 1993).

i. Fertilization - This is the union of the male and female gametes to form a fertilized ovum. (Verralls, 1993).

j. Fertilization

Fertilization occurs after ovulation and it takes place in the Ampulla of the Fallopian tube. At ovulation, the fimbriae of the fallopian tubes approach the ovary and draw the ovum into the lumen. It is then carried towards the cavity of the uterus partly by sweeping movements of the cilia and partly by the peristaltic action of the muscular tubular walls. The male deposits about 300 million sperms in the female vagina after ejaculation and only about 1000 to 3000 sperms reach the ovum. The sperms propel themselves by the lashing movement of the tail and move in the forward direction. Out of these, some are destroyed by the acidity of the vaginal fluid while some may fail to reach the uterus because they cannot swim against the fluid current. Those that reach the fallopian tubes retain their fertilizing ability for at least 72hours.

The mature sperm (spermatozoon) that encounters the ovum produces an enzyme called Hyaluronidase which breakdowns the protective protoplasm of the ovum in order to make penetration of the cell a little easier. It breaks down the corona radiata and facilitates penetration of the zona pellucida for 1 sperm only. As soon as contact between the sperm head is established, the two cells clamp together and the cell membrane is sealed so that no other sperm is allowed to penetrate the ovum. The body and tail of the sperm separate from the head as soon as access to the ovum has been gained (Sellers, 2010).

- **Development of a Fertilized Ovum**

Sellers, 2010 further explains that the zygote which is the fertilized ovum continues its journey along the fallopian tube and reaches the uterus 3 or 4 days later. During this time, cell division takes place and the fertilized ovum divides into 2, 4, 8 then 16 until a cluster of cells is formed which is called a morula. This cell division is called mitosis and it occurs slowly about once every 12 hours. A morula is produced by continuous reproduction of the zygote until it resembles a berry. This division is aided by progesterone from the corpus luteum together with oestrogen which is preparing the endometrium to receive the fertilized ovum. The morula is contained within the zona pellucida rather like an egg in a shell supported by its own cytoplasm which contains progesterone. 6 to 7 days after fertilization, the developing morula comes to lie adjacent to the endometrial which is in its secretory phase. It begins to embed by means of its own invasive properties which interact with the sticky surface of the uterine lining. By the end of the 1st week, some inner cells in the morula begin to disintegrate leaving a cavity which fills with fluid. This cavity is called the blastocyst, which consists of the following:

i. Inner cell mass -The inner cell mass will develop to form the fetus, the placental membrane known as the amnion and the umbilical cord.

ii. Trophoblast- This is where the placenta is formed.

Embedding is sometimes known as Nidation (nesting) and is normally complete by the 11th day after ovulation and the endometrium closes over it completely.

- **Development of the Embryo**

The following is a description of embyonic development according to verrals, 1993:
The Decidua - Is the endomentrium during pregnancy. The increase in oestrogen in pregnancy, leads to growth of the endomentrium to four times its non – pregnancy thickness. The corpus luteum also produces large amounts of progesterone which stimulates the secretory activity of the endometrial glands and increases the size of the blood vessels. This accounts for the soft vascular sponge bed in which the fertilized ovum implants.

- **Layers of the Decidua**

There are 3 distinctive layers of the deciduas.

a. Basal Layer of Decidua – Lies immediately above the myometrium. It remains unchanged in itself but regenerates the new endometrium during the puerperium. This is the layer that is called the basal layer of the endometrium in the non – pregnant state.

b. Spongy Layer of decidua (functional Layer) – It is so called because it is like a sponge in texture. It consists of tortuous glands which are rich in secretions. The stroma (broad band of connective tissue) cells are enlarged in what is known as the deciduas reaction. The cells are loosely knitted together with large spaces (Lacunae) in between the groups of cells.

The layer is highly vascular and secretory and under the influence of the extra progesterone secreted when the ovum is fertilized and the trophoblast is formed.

It becomes more vascular and secretary in order to provide the blastocyst with all the nourishment it requires.

c. Compact Layer: This is the first layer that the ovum encounters when it enters the uterine cavity as this layer is continuous with the lining of the uterine tubes.

- **Inner Cell Mass**

While the trophoblast is developing into the placenta which will nourish the fetus, the inner cell mass is forming the fetus.

The cells differentiate into 3 layers. Each of which will form particular parts of the fetus.

a. Ectoderm - This mainly forms the skin and the nervous system.

b. Mesoderm - Forms bones and muscles. And also forms the heart and blood vessels including those that are in the placenta. Certain internal organs also originate from the mesoderm.

c. Endoderm - Forms mucus membranes and glands.

The three layers together are known as the embryonic plate. Two cavities appear in the inner cell mass; one on either side of the embryonic plate. The first cavity is the Amniotic cavity and the second is the York sac.

- Amniotic Cavity - Lies on the side of the ectoderm. The cavity which is filled with fluid gradually enlarges and folds round the embryo to enclose it. The amniotic forms from its lining, it swells out into the chorionic cavity.
- Yolk Sac - This lies on the side of the endoderm and provides nourishment for the embryo until the trophoblast is sufficiently developed to take over. Part of it contributes to the formation of a primitive gut.

- **The Placenta**

This is an organ that originates from the trophoblastic layer of the fertilized ovum. It links closely with the mother's circulation to carry out functions which the fetus is unable to perform for itself during intra - uterine life. The survival of the fetus depends upon its integrity and efficiency.

- **Development of the Placenta**

Trophoblast **-** This is where the placenta is formed and the remainder of the chorionic villi will atrophy to form the chorionic membrane which surrounds the amniotic sac and lines the uterus. This stage of development is reached 7-10 days following conception and implantation in the uterine endometrium now begins. In the uterus, the blastocyst lies free for 2 or 3 more days.

The placenta is completely formed and functioning from 10 weeks after fertilization. In its early stages, it is relatively a loose structure but becomes more compact as it matures between 12 and 20 weeks of gestation.

- **Circulation Through The Placenta**

The foetal blood which is low in oxygen is pumped by the foetal heart towards the placenta along the umbilical arteries and transported along their branches to the capillaries of the chorionic villi. After absorbing oxygen, the blood is returned to the foetus via the umbilical vein. The maternal blood is delivered to the placental bed in the decidua by spiral arteries and flows into the blood spaces surrounding the villi.

It is thought that the direction of flow is similar to a fountain; the blood passes upwards and bathes the villis as it circulates around it and drains back into a branch of the uterine vein.

- The mature placenta
- The placenta at term (appearance) situation:

The placenta is normally situated in the upper uterine segment.

Shape: It is a flat roughly circular structure.

Size: It is approximately 20cm in diameter, 2 - 2.5cm thick in the centre but gets thinner towards the circumference.

Weight: 0.5kg (500g) or 1/6th of the baby's birth weight.

- **Surfaces of the Placenta**

These are two:

a. The maternal surface - The maternal surface blood gives this surface a dark red colour. Part of the basal deciduas will have been separated with it. The surface is arranged in about 16 – 20 lobes or cotyledon which are separated by grooves or sulci (furrows) into which the deciduas deeps down to form walls (septa). The lobes are made up of lobules each of which contains a single villus (one of the branching processes of the surface of the chorion of the developing embryo that help to form the placenta) with its branches.

b. The foetal surface **-** The amnion covering the foetal surface of the placenta gives it a white shinny appearance. Branches of the umbilical vein and arteries are visible stretching out from the insertion of the umbilical cord which is in the centre. The amnion can be peeled off the surface leaving the chorionic plate from which the placenta has developed and which is continuous with the chorion.
Look at the following illustration of a mature placenta, with foetal and maternal surfaces showing clearly;

Figure 8: Mature placenta showing both the fetal and maternal surfaces respectively.

- **The Foetal Sac**

This consists of a double membrane, the outer membrane is the chorion which lies under the capsular deciduas and becomes closely adherent to the uterine wall. The inner wall is the amnion which contains the amniotic fluid. As long as it remains intact, the fetal sac protects the fetus against ascending infection.

The Chorion - This is a thick, opaque, friable membrane derived from the trophoblast. It is continuous with the chorionic plate which forms the base of the placenta.

The Amnion - This is a smooth, tough, thin, translucent membrane derived from the inner cell mass. It has a role in the formation of the amniotic fluid.

The umbilical cord - The umbilical cord or funis extends from the fetus to the placenta and transmits the umbilical blood vessels, two arteries and one vein. These are enclosed and protected by Wharton's jelly, a gelatinous substance formed from the mesoderm. The whole cord is covered in the layer of amnion continous with that covering the placenta.

The Amniotic fluid

Origin: The source of the amniotic fluid is thought to be both foetal and maternal. It is secreted by the amnion especially that which covers the placenta and the umbilical cord. Some fluid is exuded from maternal vessels in the decidua and some from foetal vessels in the placenta. The foetal urine also contributes to the volume from the 10th week of gestation onward.
Volume: The amount of amniotic fluid increases throughout pregnancy until about 38 weeks of gestation when there is about 1000 mls (1 liter); it then diminishes slightly until term when approximately 800mls remain. If the total amount exceeds 1500mls (1.5liters) the condition is known as polyhydramnious. If less than 300 mls, the condition is known as oligohydromnios. Such conditions are often associated with congenital malformations of the foetus. The normal foetus swallows the amniotic fluid but if anything interferes with swallowing an excessive amount of amniotic fluid will accumulate. Similarly, if the foetus is unable to pass urine the amount of fluid will be reduced.
Constituents of amniotic fluid: Amniotic fluid (liquor amnii) is a clear pale straw coloured fluid consisting of 99% water; the remaining 1% dissolved solid matter including food substances and waste products. In addition the fetus shades skin cells, vernix caseosa and lanugo into the fluid.

Activity:

Get your usual note book and list 5 functions of the placenta

You have answered correctly, when you finally read you will be able to know all the functions of the placenta.

Functions of the Placenta:

a. Respiration - Pulmonary exchange of gases does not take place in the uterus, hence the fetus obtains oxygen from the mothers' blood as it passes through the fetal blood by simple diffusion and gives off carbondioxide into the maternal blood.
b. Nutrition - Nutrients necessary for normal fetal development growth and survival, such as glucose, amino – acids, vitamins and mineral salts are transferred from the mother's blood across the placental membrane to the fetal blood.
c. Excretion - Waste products such as creatinine, urea, uric acid, bilirubin among others occurring as result of the metabolism taking place in the fetal body are transferred from the fetal blood across placenta membrane to mother's blood circulation for excretion.
d. Storage - The placenta metabolises glucose, stores it in the form of glycogen and reconverts it to glucose as required. It also stores iron and fat soluble vitamins (A, D, E and K).
e. Protection – Towards the end of pregnancy, small anti - bodies, the immunoglobulins G will be transferred to the fetus and these will confer immunity on the baby for the first three months after birth. Only those anti – bodies which the mother possesses can be passed on. The maternal and fetal erythrocytes are too large to pass through this membrane. Many bacteria are also too large to penetrate the membrane but some viruses such as rubella, HIV can penetrate the placenta. It protects fetal tissues from maternal rejection.
f. Enzymal Function - Every enzyme known to exist in the human body, has been found in the placenta. These enzymes are necessary for the following:

- Synthesis of proteins.
- Functioning of fetal tissue such as respiratory enzymes.
- Steroid conversion to progesterone and Oestrogens.

g. Endocrine Function - - Human Chorionic Gonadotrophic hormone - HCG: is produced in the chorionic villi. This hormone forms the basis of the immunological and the pregnancy tests. Large amounts are secreted during the 7th – 10th week but after the 12th week, the peak period has passed and a low level is maintained until term.

Progesterone: - Is produced by the placenta from about the 12th week. The amount rises steadily throughout pregnancy and falls when the pregnancy is expelled. Progesterone maintains the integrity of the decidua so that shedding does not take place. Hence menstruation is suppressed. It aids fetal development and acts on uterine muscle and develop breast tissue. Its main function is to act on the tissues which have already been receptive to oestrogen.
Oestrogen/Oestriol - Is produced by the fetal placenta unit from the 6th – 12th week, when the amount rises steadily until term. Then after the expulsion of the placenta, it falls and allows prolactin to initiate lactation.
The fetus provides the placenta with the vital precursors for production of Oestriol. The amount excreted in the urine during pregnancy is an indication of feto - placental function. The high level of oestrogen suppresses the production of follicle stimulating hormone.
It rises throughout pregnancy and help to effect the endometrial changes in the early weeks. Oestrogen increases the sensitivity of the uterine muscle to Oxytocin which initiates uterine contractions and the onset of labour.
Human placenta lactogen (HPL) - Is produced by the syncitiotrophoblast. The level of HPL in the blood reflects placental function. A level below 4 microgrammes per ml in blood at 38 weeks gestation suggests the possibility of fetal hypoxia during labour. The positive rate is considerable – Glucose metabolism builds.
Relaxin - It is a non steroid hormone which is present during pregnancy and has a specific function of relaxing the ligaments of the joints including the pelvic joints. The effect of this is to enlarge the capacity of pelvis and permit easier labour.
Adenocorticotrophic hormone (ACTH) - it is thought to be produced in the placenta or ovary. Initially it is a hormone of the anterior pituitary gland which specifically stimulates the adrenal cortex to produce it.

Functions of Amniotic Fluid

a. The fluid distends the amniotic sac and allows for the growth and free movement of the fetus.
b. It equalizes pressure and protects the fetus from jarring and injury.
c. The fluid maintains a constant temperature for the fetus.
d. In labour as long as the membrane remains intact the amniotic fluid protects the placenta and umbilical cord from the pressure of uterine contractions.
e. It aids in effacement of the cervix and dilatation of the cervical os especially where the presenting part is poorly applied.
f. It provides nutrients for the fetus.

Activity :
Get your usual note book and mention at least 2 functions of amniotic fluid and 2 abnormalities of the cord.

Well done, it's encouraging that you have followed the lesson so well thus far vis -a –vis your correct answers.

Summary of the Developmental Stages of the Fetus

Now, learner, here is a summary form of the developmental stages of a developing fetus, adapted from Verrals, 1993.

a. 0 - 4 Weeks After Conception

- The first 21 days is the Zygotic period.
- Rapid growth
- Formation of the embryonic plate
- Primitive CNS forms
- Heart develops and begins to beat
- The limb buds form.
- Marks the beginning of embryonic period

b. 4 - 8 Weeks.

This marks the end of embryonic period.

- Very rapid cell division
- Head and facial features develop
- All major organs laid down in primitive forms
- External genitals present but sex not distinguishable
- Visible on ultra sound from 6 weeks
- Early movements

c. **8 - 12 Weeks**

- The length of body is 9 cm at 12 weeks
- The weight is 14 grams
- Eye lids are fused
- Kidneys begin to function and the fetus passes urine from 10 weeks
- The hairs appear on the head.
- Lanugo appears on the body
- Fetal circulation functions properly
- Suckling and swallowing begin
- The sex is apparent as well as external genitalia
- Moves freely but not felt by the mother
- Some primitive reflexes are present
- Beginning of fetal period

c. 12 - 16 Weeks

- At 16 weeks length is 16 cm and weight is 100 grams
- There is rapid skeletal development visible on x-ray
- Meconeum present in the gut
- Nasal septum and palate fused
- More lanugo appears
- Deposits of subcutaneous fat at 16 weeks
- Legs longer than the arms
- Skin transparent blood vessels are visible

e. 16 - 20 Weeks

- Length is 25 cm and 20 weeks.
- Weight 225 grams
- Renal function; 7-17 mls of urine is passed in 24 hrs
- Quickening-mother feels fetal movements
- Facial features are distinctive
- Vernix caseosa appears
- Finger nails can be seen and are seen and well developed
- Eye lids are well developed
- Skin cells begin to be renewed
- Rate of growth begin to slow down
- Skeleton is visible on x-ray
-

f. 20 - 24 Weeks

- At 24 weeks length is 30 cm
- Weight is 680 grams
- Most organs become capable of functioning
- There are periods of sleep and activity
- Responds to sounds (external noise)
- It is soothed if mother if listens to quiet music
- The skin is red and wrinkled
- vernix increases

g. 24 - 28 Weeks

- Length is 35 cm at 28 weeks
- Weight is 1.15 kgs
- Survival may be expected when born at 28 weeks

- Testis descends from abdomen in to scrotum at 28 weeks
- Eye lids open
- The lanugo becomes darker
- Respiratory movements start
- Hair covers the head
- More deposit of subcutaneous fat leading to less wrinkled skin

h. 28 - 32 Weeks

- The length is 40 cm
- Weight is 1.60 kgs
- Begins to store fat and iron
- Body becomes more rounded
- Lanugo disappears from face
- The skin becomes pale and less wrinkled

i. 32 - 36 Weeks

- The length is 45 cm
- Weight 2.25 kg
- Body becomes more round due to increased fat
- Lanugo disappears from the body
- Hair on head lengthens
- Nails reach tips of fingers.
- Ear cartilage soft
- Planter creases visible (lines under feet)
- Umbilicus lies more centrally in abdomen

J. 36 - 40 Weeks

- Length 50 cm
- Weight 3.50 kgs
- Term is reached and birth is due
- Contours are rounded
- Skull bones are firm
- Ossification of skull bones is still not complete (it is an advantage as it facilitates the passage of fetus through the pelvis) (Verralls, 1993).

Self Test:

We have now come to the end of this lecture. Therefore, consider attempting the following unit questions under various lessons that we have covered. Only check the answers after you have made an attempt on your own. You can cover the answers to avoid the temptation of looking before you answer. Good luck.

1. Write True or False (T/F) against each of the statements below;
   a. Fertilisation is the fusion of the Ovary and the Sperm to form a Zygote.
   b. The term used to describe the conceptus from 22 days of gestation to 8 weeks is Embyro.
   c. The term used to refer to the developing conceptus from 9 weeks up to term is Fetus.
   d. The average length of the menstrual cycle is regarded to be 30-32 days.
   e. Family Planning is not a component of Safe Motherhood.
   f. HIA 1 is for recording diseases at the Health Centre on monthly and quarterly basis.
   g. The Labia Majora are the inner folds of fat and areolar tissue, covered with skin lying between the Clitoris and the Urethra.
   h. Bartholin's glands are four small glands which open on either side of the vaginal wall.
   i. The leaning forward of the Uterus is called Antelexion.

j. The Epididymis is the site where Spermtozoa are produced.

2. Milk in the breast is produced by……
   a. Lactiferous ducts
   b. Lactiferous tubules
   c. Alveoli
   d. Ampulla
3. Fertilization occurs in which part of the uterine tube?
   a. Ampulla
   b. Ovary
   c. Isthmus
   d. Morula

Well done, now try and compare your answer with the solutions below, and make corrections where you fail to score.

Answers

1a: F, 1b: T, 1c: T, 1d: F, 1e: T, 1f: F, 1g: F, 1h: F, 1i: F, 1j: F

2. c

3. a

ACTIVITY

Before we proceed to the next lesson, get your not book and write down the systems that are affected during pregnancy.

That is a quiet a good trial. Now continue with the lesson and compare your answers with what we are going to discuss.

2.11 Physiology of Pregnancy

Physiological changes that take place in the body during pregnancy are due to effects of specific hormones. These adaptations protect the woman's normal physiologic functioning, meet the metabolic demands that pregnancy imposes on her body and protect a nurturing environment for fetal development and growth. The woman's psychological state is also affected by hormonal changes which interact with other external factors and influence her transition to motherhood (Fraser et al, 2009).

The physiological changes that take place are important to know as they help appreciate the psychological effects that they may have on a pregnant woman.

Physiological Changes

The physiological changes will be discussed under the following headings;

1. Reproductive system
2. Cardiovascular system
3. Endocrine system
4. Skeletal system
5. Alimentary system
6. Respiratory system
7. Urinary system
8. Integumentary system
9. Central nervous system

10. Maternal weight

- **Reproductive System**

Body of the uterus

The body of the uterus begins to develop in order to provide nutrition and ensure a protective environment in which the fetus is nurtured.

Decidua

This is the name the endometrium assumes in pregnancy. Oestrogen and progesterone which is produced by the corpus luteum cause the decidua to be thicker, richer and more vascular at the fundus. This is less vascular and thinner in the lower pole of the uterus. The Decidua provides a glycogen rich environment for the blastocyst until the trophoblastic cells begin to form the placenta. When the placenta has been formed, it will produce its own hormones. Prostaglandins are produced during labour from the decidua which enhances labour (Blackburn, 2007)

Myometrium

The increase in the size of the muscle fibers is known as Hypertrophy while the increase in the number of muscle fibres is called Hyperplasia. This is due to the effect of oestrogen which is a growth hormone. The uterus will grow in the first 20 weeks thereafter it will stretch to accommodate its contents. The uterus increases in weight from 60g to 900g.

The uterus also increases in size from 7.5cmx 5cmx 2.5cm to 30cmx 23cmx 20cm. These dimensions however vary depending on the age and parity of the woman (Cunningham, 1997). The uterus can stretch because of progesterone which relaxes the smooth muscles. At 8 weeks of gestation the uterus generates small waves of contractions called Braxton Hicks Contractions which are usually painless and last approximately 60seconds. At the end of pregnancy the Braxton Hicks contractions change in intensity and become the contractions of labour. During pregnancy the muscle layers become more differentiated and organized in expelling the fetus at term.

Bloody Supply

Supply to the uterus increases to keep the match with the growth and also the needs of the functioning placenta. There is new development of new blood vessels caused by oestrogen, which form a tortuous network through the uterine walls. As the uterus grows, the muscles stretch and become convoluted in the 3rd stage of labour.

Changes in the uterine shape

The upper part of the uterus enlarges due to effect of oestrogen. The uterus changes to globular shape in early pregnancy to prepare for growth of fetus and to accommodate the increased amounts of placental tissue and liquour. This causes pressure on pelvic organs. The lower parts of uterus consist of isthmus which softens and elongates from its original 7mm until 10 weeks of pregnancy when it measures 25mm.

Changes in relation to gestation age

12th Week of pregnancy

The uterus is no longer anterverted and anteflexed. The uterus rises out of pelvis and become upright and rotates to the right due to pressure of the pelvic colon that occupies space in the left part of the pelvis. It measures one third of body of uterus at term. The fundus of uterus may be palpated above the symphysis pubis.

16th weeks of pregnancy

The fundus of the uterus assumes a dome shape. As the fetus is growing it puts on enough pressure on the isthmus which causes it to change the shape to a more spherical (Coustan, 1995).

The isthmus and the cervix develop into the lower uterine segment which is thinner with fewer blood vessels and muscles, a site for most of the caesarean sections (Campbell & Lees, 2000)

20th weeks of pregnancy

The uterus is ovoid, and has a thicker more rounded fundus. The fundus of the uterus can be palpated at the level of the umbilicus. The fallopian tubes appear to arise from lower level uterus continue to rise in the abdomen with fallopian tubes restricted by attachment to the broad ligaments and become more vertical.

30th Weeks of pregnancy

At this stage, the lower uterine segment can be identified though it is not complete

But it can be defined as that portion lying below the reflection of uterine fold of peritoneum and above the internal os of cervix.

36th Weeks of pregnancy

The uterus reaches the levels of xiphisternum. The fetus sinks into lower pole of uterus because of softening of tissues of pelvic floor and together with good uterine tone and formation of lower uterine segment. This is called lightening.

The Cervix

It secrets thicker and more viscous mucus during pregnancy and form a cervical plug called operculum which provides protection to the fetus from ascending infection. The changes are brought about by increased vascularity, slight hypertrophy and hyperplasia, which also define the probable sign of pregnancy. Oestrogen increases cervical vascularity. Through a speculum examination, the cervix appears purple. In late pregnancy cervix softens in response to increasing painless contractions

Vagina

Changes in the muscle layer and epithelium are due to oestrogen. The muscle layers hypertrophies and the changes in the surrounding connective tissue allow the vagina to become more elastic and enable it to dilate during the second stage of labour and receive the descending fetal head.

Pregnancy hormones prepare the vagina for stretching during labour and childbirth by causing the vaginal mucus to thicken, connective tissue to loosen and smooth muscles to hypertrophy and the vaginal vault to lengthen. The marked desquamation of the superficial cells of epithelium which increase the amount of normal white vaginal discharge is called leucorrhoea**.** This is a white or slight grey mucoid discharge with a faint must odour. The pH of vaginal fluids is more acidic during pregnancy ranging from 3.5 to about 6 and this is the result of increased production of lactic acid caused by lactobacillus acidophillis acting on glycogen in the vaginal epithelium.

Breast

Changes that take place are due to increased hormone activity. The nipple is prepared for subsequent feeding. Oestrogen develop the duct system where as progesterone develop the glandular tissue. They enlarge due to increased tissue growth, fat deposition and blood supply.

Activity
In your notebook, mention 5 changes that take place in the reproductive system and accessory organs of reproduction.

Congratulations, continue working as hard as ever. These changes are worth knowing in order to know what to expect when the woman delivers.

- **Cardiovascular System**

The cardiovascular adaptations protect woman's normal physiologic functioning, meet the metabolic demands pregnancy imposes on her body and provides for fetal development that the woman needs. The heart increase in size due to increased workload and maybe displaced upwards and to the left, rotating anteriorly because of the increasing pressure of the growing uterus. Cardiac output increases from 5 to 7 litres per minute by late pregnancy, affected by increase in resting heart rate of about 15 beats per minute by end of pregnancy and by increase in blood volume. The total amount of haemoglobin increases during pregnancy but the main cell haemoglobin is slightly lower. Plasma Volume increases to approximately 50% above non pregnant values to provide extra blood flow for placenta perfusion at choriodecidual interface.

There is much increase in plasma volume than red blood cell mass and this lead to Haemodilution where there is lowered haemoglobin level, haematocrit and red cell count referred to as Physiological Anaemia. It is more apparently 32 – 34 weeks of gestation. Blood pressure remains the same or may drop slightly in the first trimester and reach its lowest in mid-trimester and towards the end of pregnancy it returns to level of the first trimester. Changes in the mid-trimester cause fainting. Therefore women should avoid supine position which causes pressure on the vena cava. Cardiac output is reduced and gives rise to fainting.

Take note:

Red blood cell mass increases during pregnancy, but the raise in the Plasma volume overpowers it, causing Haemodilution where there is lowered Hemoglobin level, a condition known as Physiological Anaemia.

- **Endocrine System**

During pregnancy there is an increase in most of the hormones of the endocrine system. The pituitary gland enlarges by 50% and the weight increases by 135% during pregnancy and increases its production of the hormones. Production of prolactin begins to increase early in the first trimester and increases progressively to term. It promotes secretion of milk from the breast (lactation). However, the high levels of oestrogen and progesterone inhibits lactation to the breast tissue until after birth (Guyton and Hall, 1997)

The posterior pituitary gland releases oxytocin throughout pregnancy. The release increases in amount as the foetus grows. The hormones stimulate uterine contractions but the high levels of progesterone prevent contractions until near term. Oxytocin also stimulates the let down reflex after birth in response to the infant sucking at the mother's breast.

Human Chorionic Gonadotrophin is produced by the trophoblast and is detectable within maternal circulation within days of implantation. It forms the basis of pregnancy test. Its function is to maintain the production of oestrogen and progesterone by preventing degeneration of the corpus luteum until the placenta takes over. It can first be measured in the blood stream 8-9 days after ovulation. Oestrogen increases vascularity causing vasodilation.

It also causes fat deposition in subcutaneous tissue over the maternal abdomen, back and upper thighs. Oestrogen also causes relaxation of pelvic ligaments and joints. It has an inhibiting effect on prolactin and hence prevents lactation until after delivery.

Progesterone is essential for maintaining pregnancy by relaxing smooth muscles thus preventing uterine contractility and miscarriage. Relaxin has a relaxing effect on the pelvic ligaments. Levels of Thyroid hormones also increase, and the thyroid gland itself may also increase in size, a condition known as Goitre.

- **Skeletal System**

There is relaxation of pelvic joints due to Hormonal changes, that is, Oestrogen, prolactin and progesterone. Oestrogen makes connective tissue more pliable causing joints capsules to relax and pelvic joints mobile. Progesterone relaxes and weakens pelvic ligaments. Relaxin softens the pelvis ligaments in preparation for delivery. Abdominal distention gives the pelvis a forward tilt, decreased muscle tone and increased weight. The woman's centre of gravity shifts forward causing the

development of exaggerated lumbar curve or lordosis leading to a typical waddling gait. There may be discomfort and backache in advanced pregnancy.

- **Alimentary System**

Mouth

The gums become hyperaemic, oedematous, soft and sponge. They bleed easily. This is due to oestrogen which causes increase in vascularity and connective tissue proliferation.

Appetite

The appetite and food intake fluctuate. Some women may have nausea and vomiting due to increased HCG and altered carbohydrate metabolism.

- **Respiratory System**

Oxygen requirements increase in response to accelerated metabolic rate because the fetus also needs oxygen. Elevated levels of oestrogen, causes the ligament of the ribcage to relax leading to increased chest expansion. Expansion of the chest causes tidal volume to increase by 30-40% and also an increase in insipiratory capacity. Progesterone causes dilatation of the pulmonary vasculature to increase blood volume.

- **Urinary System**

A number of changes occur in the urinary system during pregnancy. There is dilatation of the renal pelvis as well as the ureters which is as a result of relaxation of smooth muscles caused by progesterone. There is stasis of urine because of progesterone which causes the bladder muscle to become relaxed as well as dilatation of the renal pelvis and ureters. Stasis increases the risk of urinary tract infections. There frequency of micturition, tubular reabsorption remains unaltered despite the increased blood flow and glomerular filtration rate. As a result, there is an increase in clearance of substances and waste products. The protein levels in urine increase during pregnancy.

Take note: As a result of frequent micturition and sometimes urinary incontinence, Pregnant women should increase hygiene standards by having at least two baths a day or changing of under wear to avoid ascending UTIs.

- **Integumentary System**

There is hyperpigmentation of the skin which is stimulated by anterior pituitary gland melanotropin which is increased during pregnancy. It is more marked in dark skinned women and is more pronounced in areas such as the areola, the nipples, the vulva, perineum and abdomen.

Chloasma: It is hyperpigmentation of the face usually noticed on the cheeks and the forehead.

Linea nigra: It is pigmentation of the linea alba line extending from symphysis pubis to the top of the fundus in the midline.

Stria gravidarum: There is rapid stretching of the skin in the abdomen, the thighs and the breasts. It is due to high levels of circulating hormones.

- **Central Nervous Sytem**

The pituitary gland increases in size by 30-50% in pregnancy.

- **Maternal Weight**

Most of the weight gain during pregnancy is attributable to the uterus and its contents. The total weight gain is about 12-13 Kg.

Self Assessment Test
Try to answer the following questions by writing True or False (T/F) against each option. I wish you all the best as you do so.

e. The lining of the uterus in pregnancy is called Myometrium.
f. The increase in size of the uterine muscle fibres during pregnancy is called Hypertrophy.
g. The increase in the number of muscle fibres during pregnancy is called Hyperaemia.
h. Quickening in pregnancy occur at which 20 weeks of gestation.

Answers
Q1:F, Q2:T, Q3:F, Q4:F

2.12 Minor Disorders In Pregnancy

Minor disorders in pregnancy are disorders that occur during pregnancy and are not life threatening. These disorders include;

1. **Nausea and vomiting**

This presents between 4 and 12 weeks gestation. Hormonal influences are listed as the most likely causes. It usually occurs in the morning but can occur any time during the day, aggravated by smelling of food.

Management:
- Reassure the mother
- Encourage small frequent meals (dry meals)
- Encourage the woman to reduce fatty and fried containing foods
- Encourage rest

2. **Heart burn**:

This is a burning sensation in the mid chest region. Progesterone relaxes the cardiac sphincter of the stomach and allows reflux of gastric contents into oesophagus. Heart burn is most troublesome at 30-40 weeks gestation because at this stage is under pressure from the growing uterus.

Management:
- Encourage to take small and frequent meals
- Encourage the woman to be sleeping with more pillows than usual so that she is propped up to reduce on chances of refluxes
- For persistent/severe case/ prescribe antacids

3. **Pica**:

This is the term used when mother craves certain foods of unnatural substances such as coal, soil and other. The cause is unknown but hormones and changes in metabolism are blamed.

Management:
- Encourage the woman to seek medical advice if the substance craved is potentially harmful to the unborn baby.

4. Constipation:

Constipation result from the effects of progesterone that causes relaxation and decreased peristaltic activity of the gut, which is also displaced by the growing uterus.

Management:
- Encourage the woman to increase on the intake of water, fresh fruit, vegetables and roughage in the diet.
- Encourage the woman to do exercises, especially walking is helpful.

5. Backache

The backache results from laxity and softening of ligaments due to hormonal changes, altered mechanics and biomechanics due to enlarging uterus.

Management:

- Advice the woman to sleep on firm bed.
- Advice support mechanisms of the back.

6. Fainting:

In early pregnancy fainting may be due to the vasodilation occurring under the influence of progesterone. The weight of the uterine contents presses on the inferior venacava and slows the return of blood to the heart.

Management:

- Encourage the woman to avoid long periods of standing
- Encourage the woman to sit or lie down when she feels slight dizziness
- Encourage the woman not to lie on her back except during abdominal examination. This prevents pressure on the venacava.

7. Varicositis

Progesterone relaxes the smooth muscles of the veins and result in sluggish circulation. The valves of the dilated veins become insufficient and varicositis result. It occurs in legs, anus (haemorrhoids) and vulva.

Management:

- Encourage the woman to exercise the calf muscles by rising on the toes
- Encourage the woman to elevate the leg and rest on the table and support thighs and legs
- Encourage the woman to avoid constipation and advise adequate fluid intake.
- Encourage the woman to use - Sanitary pad give support for vulva varicosities.

8. Other than the minor disorders in pregnancy, the following danger signs should be looked out for and they require immediate actions;

- Vaginal bleeding
- Reduced fetal movements
- Frontal or recurring headaches
- Sudden swelling
- Rupture of the membrane
- Premature onset of contractions
- Maternal anxiety for whatever reason
- Persistent or unusual headaches
- Persistent nausea and vomiting
- Dizziness
- Disturbances of eyesight
- Pain or cramps in the lower abdomen
- Swelling of the hands or feet
- Decreased urine production
- Any illness or infection
- Tremor (shaking of the hands, feet, or both)
- Seizures
- Rapid heart rate

2.13 Antenatal Care (ANC)

Antenatal care is supervision and management offered to a pregnant woman from confirmation of conception to the beginning of labour (Henderson and Macdonald, 2004).

Focused Antenatal Care (FANC)

According to MoH, 2003 this is the basic antenatal care that is given to all pregnant women that emphasizes on the quality of care rather than the quantity or frequency of visits, in which every pregnancy is considered to be at risk for complications.

Activity

Get your note book and differentiate between ANC and FANC

Good it's very impressive, now that you have known the difference it will be easy for you to understand the topics that follows.

Focused antenatal care is a way of organising antenatal services with emphasis on quality rather than quantity of visits in an attempt to improve maternal satisfaction by the provision of holistic, individualised care and organisational change in the pattern of care.

This is on the basis that every pregnancy is a risk. It relies on evidence based and goal directed interventions that are appropriate to the gestational age of the pregnancy.

Recommended Minimum Antenatal Care Schedule

Evidence shows that quality basic antenatal care can be provided in four focused visits at key times during pregnancy.

First visit: Within the first 16 weeks of gestation

Second visit: 24 -28 weeks

Third visit: 32weeks

Fourth visit: 36 weeks

However, further visits can be arranged depending on individual client needs.

Components of FANC

There are four components of Focussed antenatal care (FANC)

A. Early detection of complications and prompt treatment
B. Disease Prevention
C. Birth preparedness and complication readiness
D. Health promotion

A. Early Detection and Treatment

- Although most pregnancies are normal, early detection and treatment of problems that can complicate pregnancy is important.
- Focused ANC promotes targeted assessment during which the skilled provider interviews, examines, and tests the woman to detect signs and symptoms of pregnancy.

B. Prevention of Conditions/ Complications

- To prevent certain conditions safe, simple and cost-effective interventions are carried out.
- These are Tetanus Toxoid immunization to prevent tetanus and provision of iron/folate supplementation to prevent iron deficiency which may lead to severe anaemia and complications like pre-term birth, congenital anomalies and intrauterine growth restriction.

- Intermittent preventive treatment with Fansidar and insecticide-treated bed nets for malaria.
- Intermittent Presumptive Treatment (IPT) for hookworm infection through provision of either albendazole or mebendazole doses.

C. Health Promotion

- Throughout Antenatal care health education and counselling are done to make sure women are able to take care of themselves.
- It is the duty of the skilled provider to ensure that adequate information is given to these mothers.

Messages given include;

- Preparing a birth plan.
- Recognizing danger signs in pregnancy and during childbirth.
- HIV and pregnancy
- Malaria in pregnancy
- Nutrition during pregnancy
- Activity and exercise
- Childbirth and infant nutrition including breastfeeding and replacement feeding
- Postnatal care and family planning services.

D. Birth Preparedness and Complication Readiness

- If a woman is well prepared for a normal childbirth and possible complications, she is more likely to receive the skilled and timely care she needs.
- This can protect the mother and the newborn's life. It allows for time to develop a birth plan which includes making arrangements for normal childbirth.

Developing a birth plan

It includes;

- The skilled provider to attend the birth.
- Place of birth
- Transportation of the pregnant woman to the skilled provider.
- Funds
- Support person or birth companion.
- Items needed for a clean and safe birth and for the newborn.

Some arrangements in case of complications

- Recognition and response to danger signs
- Decision-making in an emergency situation
- Emergency funds.
- Emergency transportation.

Activities that are carried out in antenatal care

The activities carried out at the Antenatal clinic are the following:

- Registration and booking.
- History taking

- Physical examination
- Investigations and tests.
- Medications
- Referrals
- Advise and IEC
- Recording

Registration and booking

When the woman reports for Antenatal Care booking, she has to be registered for the purpose of record keeping and documentation.

History taking

The following are the preliminary points to note during History taking:

- Prepare the necessary equipment.
- Greet the woman respectfully and introduce yourself.
- Offer the woman a seat and ensure privacy.
- Explain the procedure and encourage her to ask questions.
- Get her permission before you begin the procedure.
- Listen to what the woman has to say.

Now here is the detailed procedure for History taking:

History taking is cardinal during ANC booking for a Nurse/Midwife to get to know the client well. It is a means of assessing the health of the woman to find out any condition which may affect child bearing. The history has to be comprehensive. Key issues to consider in history taking include the following;

i. Social History

Name, age, marital status, religion, residential address, occupation and education level for self and spouse, social habits and environmental factors. This history is taken to identify rationale for follow up and health education. Age less than 18 years or greater than 35 years are considered as high risk mothers.

- Ask her how she is feeling and respond to danger signs if any

ii. Family History

This kind of history is taken to know the genetic predisposition to certain diseases. Ask the woman if there is any history of the following in the family; diabetes mellitus, hypertension, asthma, epilepsy, sickle cell disease and mental illness since they tend to run in families. Include history of pulmonary tuberculosis contact and history of multiple pregnancies.

Personal Medical History

Ask the woman if she has ever suffered from any medical condition for example as outlined in family history. In addition ask about history of sexually transmitted infections, urinary tract infection, hepatitis and others. Former illnesses may have damaged certain structures or organs which could give rise to complications during pregnancy and labour.

iv. Surgical History:

Ask the woman whether if she has had injuries or operations involving the pelvic bones, spine or lower limbs. These could alter the pelvic diameters and angle of inclination that may lead to cephalo-pelvic disproportion. Remember to ask about history of blood transfusion to exclude iso-immunisation if the woman is rhesus negative.

a. Past Obstetrical History: ask about parity and gravid

Ask the woman about;

- Record of previous pregnancies and labour
- Was labour premature or post mature, spontaneous or induced, history of instrumental deliveries, previous obstetric
- Complications and previous babies?

b. Menstrual and contraceptive history

- Ask about age at menarch, menstrual interval and bleeding pattern
- Ask about method of contraception; when and how long and reasons for stopping.

c. Present obstetric History

Ask the woman for the first day of the last normal menstrual period and then calculate the gestational age of the pregnancy and expected date of delivery.

v. Ask the woman about health and other concerns during pregnancy such as:
Fatigue, drowsiness, headaches, sore tongue, loss of appetite, nausea and vomiting and oedema

- Ask the woman about her dietary intake**;**
  - What type of foods, how many times a day and any ingestion of non-food stuff?
- Ask the woman about social support and record her responses;
  - Main support persons (for example husband, father or mother).
  - Availability of money for food, transportation, baby supplies and others.

Physical Examination

History taking, this should be done under strict privacy. Tell the woman what is going to be done and encourage her to ask questions. Listen to what the woman has to say prior to the physical examination as a nurse note the following;

Stature – If a woman has a small built she is likely to have a small pelvis.

a. Gait - As the woman walks in, observe any deformity, stunted growth, limp and others, such may indicate disproportion in the pelvic diameters.

b. A pregnant woman tilting backwards with a large abdomen may make one suspect multiple pregnancies or a very large foetus and others.

Height; - 150 cm or less needs special care.

Weight:-The average weight gain during pregnancy is about 12-14 kg in the first trimester a woman should gain 0.4 kg per month and in the second and third trimester she should gain 0.4 kg per week.

Blood pressure, temperature, pulse and respiration: - Checked and recorded at each visit,

Urinalysis – ask the woman to pass urine and you should perform Urinalysis. This should be done at every visit to rule out proteins, sugar and acetone in urine.

Actual examination

It has to be done from head to toe assist the woman to get onto the couch

Wash your hands thoroughly with soap and water and dry them, then start the examination.

- Head – look for under nourish hair and general cleanliness
- Eyes – examine for pallor and jaundice on the conjunctiva by asking the woman to look up.
- Nose – examine the nose for polyps.
- Ears – examine the ears for polyps and any discharge.
- Mouth – ask the woman to open the mouth. Check for signs of anaemia on the lips, mucus membranes of the mouth, gums and tongue. Check also for fissures on the tongue, oral thrush and sores on the tongue. Take note of dental caries, present find out if they are painful.
- Glands – palpate for enlargement of the peri-auricular lymph glands, submandibular lymph glands and cervical glands around the neck. Palpate the thyroid gland too. Ask the woman to swallow while your fingers are lightly placed just below the larynx. Enlargement of gland suggest infections, chronic illness or may be to the effect of oestrogen on the glands
- Hands – starting with the furthest arm, examine the arms for signs of anaemia on the palms, poor venous return on pressure of the nail beds. Examine for signs of oedema. Ask the woman to make a fist with each hand; a feeling of tightness in the knuckles in the absence of pitting oedema would be suggestive of occult oedema.
- Check for any physical disability and symmetry of the arms. Lastly palpate the axilla for any enlarged lymph nodes.
- Breast- examine the breast for;
  - Presumptive signs of pregnancy that is, Montgomery's tubercles, darkening of primary areola and secondary areola.
  - Suitability for breast feeding – this is more significant in primigravidae. Expression of fluid shows that the ducts are patent. Presences of clear fluid, milky fluid, colostrum, are presumptive signs of pregnancy.

- Lumps or swelling in the breast.

- Lower limbs - starting with the furthest leg, examine the legs for signs of anaemia on the soles, poor venous return on pressure of the nail beds. Examine for signs of tibial, pedal and ankle oedema. Check for any physical disability and symmetry of the arms. Also check for varicose veins and calf pain.
-

Abdominal examination

Inspection

Shape:-Note the contour of the abdomen -is it round, oval, irregular or pendulous?

Size: - Should correspond with the supposed period of gestation

Skin: - check for dark line of pigmentation (lineanigra), straegravidarum, scar - Any operation scar(c/s) and any skin lesions.

Palpation

- Measure Height of Fundus to determine the how old the pregnancy is
- Do Fundal Palpation to determine lie and presentation.
- Do Lateral Palpation to determine the lie, attitude and position
- Do deep pelvic Palpation to determine the Presentation

Auscultation:

Listen to the Foetal heart rate and rhythm, count for one complete minute to ascertain regularity.

Laboratory test

i. Urine:- For Protein and glucose
ii. Blood Tests: Colect blood samples for - RPR, HIV, Haemoglobin, Rhesus and blood grouping.

Treatment

The following are the drugs given to the pregnant woman;

i. Intermittent Presumptive Treatment: Three doses of Fansidar (SP) to be given at 1st, 2nd, and 3rd visitto prevent malaria in pregnancy and/or treat asymptomatic malaria. The SP is to be taken by the woman under direct observation by the Nurse.
ii. Tetanus toxoid injection to be given up to 4th dose to prevent adult/neonatal tetanus.
iii. Mebendazole 500 mg per oral stat is given for deworming. This is given as a single dose with a minimum gestational age of 20 weeks.
iv. Daily doses of ferrous sulphate 200mg and Folic acid 5mg to prevent and correct iron deficiency anaemia and folic acid deficiency anaemia.

Information Education and Communication (IEC)

Give IEC on;

1. Nutrition in pregnancy
2. Hygiene in pregnancy
3. Danger signs in pregnancy
4. Minor disorders in pregnancy
5. Birth preparedness and complication readiness,
6. Malaria in pregnancy
7. PPTCT
8. Importance of ANC
9. Signs of true labour
10. Family planning
11. Birth registration
12. Child immunisation and many more.

Recording of findings

Record or enter all the information gathered and the care provided on the antenatal card and safe motherhood register.

Self Test

Encircle the most appropriate answer from the following questions:

1. In Focussed Antenatal Care, the second visit should be … of gestation.
   a. 9weeks to 12 weeks
   b. 24weeks to 28 weeks
   c. 28 weeks to 32 weeks
   d. 26 weeks to 28 weeks
2. The components of FANC include the following except….
   a. Physical examination
   b. Health promotion
   c. Birth preparedness and Complication readiness
   d. Disease prevention
3. The recommended First line ARV regimen in pregnancy is….
   a. TDF+ EFV+ NVP
   b. ABC+ EFV+ LPV
   c. TDF+FTC+NVP
   d. TDF+FTC+EFV
4. In Option B+, an HIV positive woman is commenced on HAART ……
   a. When CD4 Count is < 350 cells/ mm³ and Clinical stage II
   b. When CD4 Count is > 350 cells/ mm³ and Clinical stage 1
   c. Regardless of CD4 Count and Clinical stage
   d. Regardless of CD4 Count but with Clinical stage III

Answers
Q1: B, Q2:A, Q3: C, Q4: C

Activity

Get your usual note book and list at least 8 activities that are carried out at the Antenatal Care.

Congratulations, you really need to know these activities they are all very important to this practice.

2.14 Implementation of PPTCT Package

Elimination of HIV transmission from mother to child (eMTCT) reduces infant mortality and is a first line of defence against the spread of the epidemic. HIV transmission from mothers to children can happen during pregnancy, at birth or through breastfeeding. Without care and treatment most of these babies will die in the first two years of life. Many die at home before they have been properly diagnosed and treated.

PPTCT refers to Prevention of Parent to Child Transmission of HIV. Formerly it used to be referred to as PMTCT, which stood for Prevention of Mother to Child Transmission of HIV.

Background of PMTCT in Zambia

PMTCT services were first introduced in Zambia in 1999 through the Ministry of Health in conjunction with UNICEF through a pilot project in Lusaka, Mbala and Monze to ensure both urban and rural sites. The pilot project was expanded to an additional nine sites, and then rolled out to all provincial centres and all districts in Zambia which now have functioning PMTCT services coupled with strengthened reproductive health services.

So why then should we have a new Policy on MTCT?

It was discovered that 1 out of 7 HIV positive pregnant women does not receive the treatment she needs, and that 3 out of 4 HIV positive pregnant women did not have access to a CD4 count test. Therefore, in order to prevent morbidity and mortality among HIV positive pregnant women, Option B+ was more conducive than the Options A and B. In Option A,

Women received Antenatal and Intra-partum Antiretroviral prophylaxis along with an antiretroviral postpartum "tail" regimen to reduce risk of drug resistance. Infants also received postpartum antiretroviral prophylaxis throughout the duration of breastfeeding.

In Option B, all pregnant and lactating women with HIV offered a triple combination of ARV drugs, beginning in the Antenatal period and continuing throughout the duration of breastfeeding. At the end of breastfeeding, women who did not require ART for their own health discontinued the prophylaxis, re-starting ART when the CD4 count falls below 350 cells/mm.

Testing

The conventional form of HIV testing in antenatal clinics is routine testing called Opt out strategy, whereby women are told that HIV testing is a standard part of antenatal care, but they can opt out if they want to. An alternative model is VCT - voluntary counseling and testing. Removing the special status that is often given to HIV testing helps to make it more acceptable...

Activity :
Get your usual note book and define MTCT. Also distinguish the following terms: PMTCT, EMTCT, and PPTCT.

Excellent, now you must not interchange these terms when applying them in FANC. Also look up on Policies on the same from MoH and read more.

Elements of PPTCT

1. The primary prevention of HIV infection among women, especially young women
Avoiding infection in parents-to-be will help to prevent HIV transmission to infants and young children, as well as help towards other prevention goals.
2. The prevention of unintended pregnancies among HIV-infected women.
Reproductive health (including family planning) services need to be strengthened so that all women, including those who are infected, can make informed decisions about their future reproductive life, including when to seek appropriate support and services to prevent unintended pregnancies.
3. Provision of specific interventions to reduce HIV transmission from HIV infected
Women to their infants
For HIV-positive women who do become pregnant, WHO has identified a package of interventions for the PMTCT? It includes antiretroviral drug regimens for HIV-infected pregnant women and their new-born, safe obstetric practices and counselling and support for HIV-infected pregnant Women on infant feeding options.

4. Provision of treatment, care and support for HIV-infected mothers, their infants and family

Care and support must be fully integrated into on-going efforts to improve maternal and child health services, and be tailored to the needs of women for safe and effective antenatal, obstetric and reproductive health services.

Intervention:-Treatment and Prophylaxis

Provide confidential, mandatory counselling and voluntary HIV testing as part of the routine service. This needs to be done at each contact point. Husband /partner are encouraged to come for counselling and testing. Women are encouraged to disclose their status to their partners. Psychosocial support for HIV positive mothers and HIV prevention education for negative mothers is provided. Also Referral of positive mothers to peer support groups is done as well as promotion and provision of condoms for all couples to use at all times during pregnancy.

Now a new, third option (Option B+) provides same triple ARV drugs to all infected pregnant women beginning in the antenatal clinic and also continuing this therapy for all of these women for life.(WHO 2012).

ARV drugs commonly used in pregnancy

NRTIs	NNRTIs	PIs
NRTI Tenofovir (TDF) NRTI Lamivudine (3TC) Emtricitabine (FTC) Abacavir (ABC)	Efavirenz (EFV) Nevirapine (NVP)	Lopinavir/r (LPV/r) Atazanavir/r (ATV/r)

Take note:
It is important to have knowledge on Antiretroviral Drugs (ARVs), their combinations and contraindications in order to prevent giving the wrong Drug that may cause Terratogenic effects onto the developing conceptus.

Recommended first line regimen in pregnancy
Tenofovir (TDF) + Emtricitabine (FTC) + Nevirapine (NVP)
Tenofovir + Emtricitabine (Or Lamivudine) + Lopinavir-ritonavir

Drugs Contraindicated

TDF has been associated with renal toxicity therefore when calculated crcl < 50ml/min, it is recommended to initiate first line therapy with ABC + 3TC. Efavirenz (EFV) is associated with Terratogenic effects; therefore it is contraindicated especially in First trimester.

Option B+/ EMTCT
EMTCT stands for elimination of Mother to Child Transmission of HIV. The goal of the global plan is to move towards eliminating new HIV infections among children and keeping their mothers alive. In view of this there are global targets that have been set.
Global Target 1: Reduce the number of new HIV infections among children by 90%
Global Target 2: Reduce the number of AIDS related maternal deaths by 50%.
Services offered under Option B+

- Cotrimoxazole prophylaxis (CTX) to all positive pregnant women regardless of gestation age, CD4 count or WHO clinical stage in order to prevent PCP and improve general health status.
- Testing of partners and family members and linkage to treatment, care and support.
- Effective Informed Screening of all women presenting at ANC for TB.
- Appropriate family planning counseling and support
- Promotion of consistent use of condoms during pregnancy, postnatal and breastfeeding periods
- Fostering decision making about pregnancy choices.

Lifelong ART
All HIV positive pregnant or breastfeeding women should be initiated on lifelong ART immediately regardless of CD4 count (Provided there are no contraindications arising from laboratory results and client readiness assessment). The HIV positive sexual partner is also automatically eligible for initiating ART irrespective of his CD4 or clinical stage.

Linkages between MCH and ART
All HIV positive women should be initiated on lifelong ART in MCH. In addition, HIV positive partners should be initiated on ART in MCH. Infants with confirmed HIV infection should also be initiated on ART in MCH. Follow up of mother baby pair will continue in MCH till the exposed infant reaches 18 months of age.

2.15 Management of Normal Labour

Labour Is the process by which the fetus, placenta and membranes are expelled through the birth canal.
Normal labour Is the labour that occurs at term and is spontaneous in onset with the fetus presenting in vertex and the process is completed within 18 hours, with no complication to both the mother and the fetus (Sellers, 2010).

Admission of a Woman in Labour

The following are the Objectives when admitting a woman in labour:
1. To confirm if the woman is in established labour.
2. To reassure the patient and allay anxiety.
3. To detect any abnormality and take appropriate action.

Requirements for admission of a woman in labour

The trolley should be prepared as follows.

Top shelf

1. This is made sterile

2. Prepare a vaginal delivery pack containing 2 gallipots, with cotton wool swabs, episiotomy scissors, umbilical cord scissors, vaginal pad, and pair of sterile gloves. Put on top shelf.

Bottom shelf

1. Clean sheets

2. Mackingtosh with draw sheets

3. Receiver for used swabs

4. Sphygmomanoter and stethoscope

5. Bottle of savlon 1:2000 for swabbing

6. Thermometer

7. Fetal stethoscope

8. Multistic reagents

9. Gallipot with clean cotton wool

10. Gallipot with clean water

11. Soap and towel

Procedure

a. Admitted the woman in labour ward which is clear and well ventilated with adequate light source.
b. Greet and Welcome the woman into the ward and Make her feel comfortable.
c. Introduce yourself in a friendly manner and reassure the woman.
d. Quickly Assess the general condition of the woman i and act appropriately according to your assessment and priorities that you make
e. Give psychological care
f. Review the antenatal card taking note of the past obstetric history, medical history, anything unusual about the present pregnancy and relevant data.

Management of first stage of labour

This is the stage of cervical dilatation; it begins with regular progressive, rhythmic uterine contractions and ends with full cervical dilatation
This stage of labour is divided into two;

- **Latent phase** (period from onset to 4cm cervical dilatation) and
- **Active phase** (period from 4cm to full cervical dilatation)

History Taking

Biographic data
Take the social history of the woman, taking note of the name, address, age, occupation, education level, and next of kin's particulars.

Past obstetric history: obtain the past obstetric history and compare with what is on the antenatal card. Ask about the parity, garvida, history of previous deliveries (the mode, duration and outcome), number of living children and their general condition.

Take note of any history of abortions and the cause if any. Ask about the L.M.P and calculate the E.D.D and gestational age

History of labour

Obtain details concerning the present labour and enquire the following:

- Ask her about the time and onset of regular uterine contractions (when labour started)
- Ask if there is any vaginal bleeding observed any presence of show.
- Ask if the membranes have ruptured and the time they ruptured.
- Other information
- Ask her when she last had a meal
- Ask if she had taken any medication and reasons for the same.

Physical examination

Vital signs
Check the Temperature, Pulse, Respiration and Blood Pressure

Urinalysis- obtain urine specimen for urinalysis and test especially looking for presence of albumin, sugar or acetone, measure the amount, colour and record. Also do a head to toe physical examination and take not of the general condition; exhaustion, anaemia, hydration state, presence of oedema and varicose veins, signs of chronic illness.

Abdominal examination
Inspect the abdomen for shape, size, note for any fatel movements and contractions, and presence of any scars. Palpate to determine the height of fundus, lie, presentation, position and descent (engagement status). Auscultate for the foetal heart rate and rhythm.

Vaginal Examination (VE)

Objectives
The main intention of a VE is to confirm if the woman is in labour and also:

- To form baseline data for subsequent examinations.
- To detect any abnormalities and to make appropriate interventions.
- To confirm the presentation

- To determine cervical dilatation. If it is 4cm and above, open a partograph to monitor foetal wellbeing, progress of labour and maternal wellbeing.
- Determine if membranes are intact or not.
- To assess progress of labour with regards to Station, Position, and to assess Presenting part, moulding and Caput.

If the woman is in active phase vaginal examination has to be done every 4 hours to confirm second stage of labour, rule out cord prolapse when the membranes rupture and to determine the position and station

Investigations
Blood is collected for haemoglobin, grouping and cross matching.

Emotional support
Talk to the woman and reassure her that you are trying your best to help her deliver. Explain every procedure that you do to allay anxiety. If it is the first pregnancy, explain the process of labour and delivery to allay anxiety and promote cooperation.

Infection prevention
Ensure the woman is nursed on a well-made clean bed; wash your hand before and after every procedure or contact with the client. When doing vaginal examination, use sterile glove and clean the vulva (Vulva swabbing) whenever need arises. Change linen whenever soiled and dispose of used gloves and other material as per protocol.

Position and mobility
In latent and early part of active first stage of labour, encourage the woman to walk around in the ward this helps quicken the labour process.
As the active phase advances, she can be encouraged to be around the delivery bed. When in bed the woman is encouraged to be in lateral position to avoid pressure on the major blood vessel that may lead to hypotension.

Nutrition
In the latent phase allow the woman to eat normally. In active phase allow soft foods and fluids. As the active stage advances, chips of ice can do to sooth the throat.

Bladder care
Encourage the woman to empty the bladder every 2 hours as a full bladder prevents the head from engaging which may lead to prolonged labour.

Bowel care
Encourage the woman to empty bowels to promote quick delivery and for hygiene purposes when time for delivery comes.

Observations

Do half hourly observations of – foetal heart beat, maternal pulse and contractions for length, strength and frequency. Do 2 hourly check of the bladder to ensure it is not full. Do every 2 hours observations of Blood pressure and temperature. Do 4 hourly monitoring of descent, Vaginal Examination and urine test for acetone, albumin. If in active phase of labour, observe as outlined below and enter the information on the partograph;

Observe the fetal wellbeing; by monitoring the Fetal heart rate (FHR) ½ hourly, assessing the mouding at every vaginal examination (4 hrly), colour of the liquor (that is, meconium stained or not)

Observe the progress of labour; by monitoring uterine contractions ½ hrly for strength, duration and frequency. Monitor the descent 4 hrly, monitor virginal examination 4 hourly assessing cervical dilatation, condition of the cervix (That is, effacement, thinning or any oedema), and station of the presenting part.,

Observe the maternal wellbeing; monitor the maternal pulse ½ hrly, respirations 2 hrly, BP hrly, monitor the nutritional status and meals/ fluids, observe the urine output (note the amount, colour and consistency).

Pain relief
Some mild analgesics may be given in the latent phase. Massaging on the back can also relieve some pain. Continued psychological care helps in relieving pain

Information, Education and Communication

As the woman approaches second stage of labour, inform the woman that the second stage can last from 20 minutes to 2 hours and that contractions will last longer at intervals of 3-5 minutes rest in between. Also educate the woman that she will have a strong urge to push, will feel pressure at the rectum with some involuntary bowel movement and eventually there will be crowning (head of fetus becoming visible on the introitus).

Instruct the client to push only when advised to do so by the care provider.

Equipment:

Have the equipment ready: A Delivery set, sterile towels, cord clamp and functional resuscitaire or suction machine and some Oxytocin, 10 IU. Also prepare in advance the cot bed where to keep the baby covered with warm linen.

Activity
In your usual notebook, distinguish between Labour and Normal labour and take note of the main differences. Now use a table and write the differences on opposite columns and master them.

That is a job well done; keep remembering the definition of Normal Labour.

Second Stage of Labour

The second stage of labour is defined as that time from the completion of dilatation of the cervix to the delivery of the baby. Once the woman is in the second stage of labour, do not leave her alone, and a constant and careful supervision of her must be done.

Observations
Do two hourly observations of maternal Pulse and Blood Pressure and record. Do observation of Foetal heart rate, count and record after every contraction to ascertain the foetal wellbeing. Check uterine contractions every 30 minutes for strength, length and frequency and observe the general condition of the woman.

Bladder care: Do catheterization if the woman is unable to pass urine. If the bladder is not empty, it may delay the second stage of labour, and I may rupture.

Hygiene: Clean the vulva and the surrounding parts with sterile solutions whenever need arises.

Psychological support

Help her to relax and be as comfortable as possible (Give her ice chips if available and provide physical support her in her position.). Help guide her through her contractions. Give verbal encouragement by telling her how well she is doing. Do not be offended if she displays anger or becomes emotional.

Information, Communication and Education
Encourage the woman to;

- Get into a pushing position that uses gravity to her advantage
- Push when she feels the urge
- Relax her pelvic floor and anal area (Kegel exercises can help)

- Rest between contractions to help regain her strength
- Use a mirror to view her progress (This can be very encouraging!)
- Use all her energy to push

Position

As you prepare the woman for delivery; help position the woman in a delivery position of her choice, watch descent of head, foetal heart and the woman's condition. Encourage the woman and place her in position.

Conducting of Delivery

Swab the vulva and drape delivery area with sterile towels. Use a sterile pad to cover the anus.
When the Head Bulges: The perineum and the head is crowned, place one hand over head to control it and prevent it from coming out quickly. Place the other hand on a pad or gauze over the anus to keep away stool and help control the head. When the head is born, keep one hand on it and wipe the eyes with the other hand using dry cotton swab. Remove excess mucus from mouth, with gauze wrapped around finger and look for cord around the neck, if there and it is tight, clamp it twice and cut in between. Wait for rotation of the shoulders: Then with two hands grasp the head over the parietals, deliver the anterior shoulder by downwards movement, then the posterior shoulder by upwards movement. Then slide one hand under the body and lift it out. Note time of birth and sex of baby and do an Apgar score at 1 minute and at 5 minutes. Lay baby down, clear Airways and make sure baby is breathing. Then clamp the cord about 10cm from the umbilicus in two places about 2.5cm apart and cut in between with a piece of gauze over the site to prevent splashing of blood into your face. Show the baby to the mother for identification. Dry baby well and wrap in a fresh warm towel. Palpate the uterus to rule out presence of another foetus, and then ask your assistant to administer oxytocin. Put identity on the baby and place the baby in a cot and continue with the third stage of labour (Basavanthappa, 2006).

Take note

The Partograph should be correctly at timely filled in and maintained as it is the tool used to identify any deviations from normal during Labour. It contains important information on fetal wellbeing, Progress of labour and Maternal wellbeing.

Self test

1. Second stage of labour is the period from

a. Onset of regular rhythmic uterine contractions to expulsion of the fetus.

b. Full cervical dilatation to complete expulsion of the fetus, placenta and membranes.

c. Full cervical dilatation to complete expulsion of the fetus.

d. Birth of the baby to expulsion of the placenta and membranes.

2. The main components of the Partograph includes

a. Fetal well being

b. Progress of labour

c. Maternal well being

d. All of the above

3. After delivery, the midwife should continue to observe the woman in the labour ward for at least

a. Six hours

b. Four hours

c. Two hours

d. One hour

Answers

Q1: C, Q2: D, Q3: D

Third Stage of Labour

This is the stage of separation and expulsion of the placenta and membranes and control of bleeding, which starts with complete birth of the baby (Fraser & Cooper, 2003). It begins immediately after the baby is born, until the placenta is delivered. The third stage lasts between 5-15 minutes but any period up to 1 hour is normal.

Third stage of labour is considered a dangerous time because of the possibility of haemorrhage. Therefore nurses should be proficient in managing this stage of labour to prevent postpartum haemorrhage.

The third stage of labour is of two (2) types:
a. Active management and
b. Passive management.
The active management is recommended at present time.

Take note:
During Third stage of labour separation and expulsion of the placenta and membranes occur as a result of interplay of mechanical and haemostatic factors. In both cases asepsis should be observed.

Active management of the Third stage of labour
After clumping and cutting the umbilical cord, palpate the uterus to exclude presence of another fetus. Give Injection Oxytocin 10 IU intramuscularly and wait for a while for signs of placental separation to appear, these include;

i. A gash of fresh blood
ii. Lengthening of the cord
iii. Fundus become rounder and smaller

After confirming the signs of placental separation, deliver the placenta and membranes by Controlled Cord Traction (CCT). Thereafter inspect the placenta if it is healthy and complete. Rub up the fundus to expel the clots and debris that could have remained. Inspect the cervix and vagina and the perineum for any tears that may need attention. If present suture/repair. Clean up the mother and make her comfortable. Clear equipment and clean up the delivery bed with appropriate disinfectants.

Remember to communicate with the woman throughout the procedure, give information education and communication and continue providing Psychological care. Once you ensure that both the mother and the baby's conditions are stable, you need to examine the placenta to detect if there are any abnormalities**.** From time to time, certain placental, membrane and cord abnormalities are found. Some of these abnormalities are of significance for they pose a danger to the mother or to the foetus. An abnormal placenta may also be an indication of abnormal maternal or foetal condition (Sellers, 2013).

Abnormalities of the placenta, membranes and the cord
a. Placenta oedema (placental colour)

- A large pale placenta may indicate that the mother has diabetes mellitus.
- A large pale watery placenta can be an indication of hydrops fetalis due to rhesus iso immunization or due to some pathological conditions of the fetal kidneys or pituitary gland or due to maternal syphilis.

b. Meconeum stained (yellow) placenta and cord

This staining is caused by meconeum being passed in utero, for example intra uterine growth retardation due to periods of fetal hypoxia. Yellow staining can also be due to high levels of bilirubin in liquor amnii caused by rhesus iso immunization.

c. Placenta succenturate – this is a placenta in which an accessory cotlydone developes away from the main placental structure. Blood vessels travel across the membranes connecting the succenturiate lobe with the main placenta

d. Placenta bipartite or tripartite – two separate area of the placental tissue (bipartite) or three separate areas (tripartite) develop but there are no connecting blood vessels between or among them. There is one umbilical cord which sends a branch to each lobe.

e. Placenta circumvallata – during development the amnion and the chorion double back around the circumference of the placenta giving the appearance of a collar. The danger of this placenta is that the chorion or part of it can become detached from the edge of the placenta and can be retained in the uterus resulting in postpartum haemorrhage.

f. Hydatidiform mole (gestational trophoblastic disease) – this is a developmental abnormality of the trophoblast, occurring in the first trimester where there is a vesicular change in the chorionic villi. The chorionic villi become swollen and cystic, like small grapes and proliferate greatly. No foetal blood develop and consequently the zygote dies and is absorbed

g. Placental infarcts – true infarcts of the placenta are areas of necrosis where the chorionic villi have been damaged and usually due to vaso spasms of maternal circulation and the areas around the villi have become calcified. More extensive degeneration occurs in association with pre-eclampsia where the disease causes arteriole spasms and large infarcted areas resulting in placental insufficiency.

h. Placenta accret, increta and percreta – this is a condition where the trophoblastic villi have penetrated through the basal layer of the decidua and become attached to the myometrial cells (placenta accrete). In some instances the villi have penetrated the myometrial cells (placenta increta) or have even penetrated through to the serosal surface of uterus (placenta percreta).this condition will usually result in retention of the placenta and will necessitate surgical intervention.

i. Haemagiomata of the placenta – this is the only common non-trophoblastic tumpour of the placenta. Some of the haemangiomata are associated with complications such as polyhydramnios, foetal hypoxia, intra uterine growth restriction and intra uterine foetal death

Abnormalities of the membranes

a. Amniotic bands – Due to lack of amniotic fluid, the foetus comes into contact with amniotic membrane. The membranes may then attached to and form a band of amnion around a limb. This results in badly deformed limbs or may cause amputation of a hand, foot and sometimes the whole limb.
b. Placenta venestra (membranecae) – in this condition, almost the entire membrane is covered with thin, but functioning placental tissue. This causes the decidual lining to be expelled with the placenta after delivery and could therefore result in postpartum haemorrhage.

Abnormalities of the umbilical cord

a. Short cord: Is any cord less than 40 cm, but it could be as short as 20 cm.

Dangers

- It delays or prevents descent of the fetus during labour.
- Early separation of the placenta causing fetal anoxia.
- The cord may snap which could result in fetal anoxia.
- Loss of fetal blood and retained placenta.

b. Very long cord: Some cords may be as long as 150 cm. Long cords may become wound to any part of the fetus or even two – three times around the neck of the fetus at birth. If too tight this will lead to reduction of blood flow to the distal tissues which may lead to underdeveloped or it may stop the blood flow which will cause withering of the limbs even fetal death if wound around the neck or body of the fetus. During delivery it can strangulate the fetus and cause death.

c. True knots in the cord

This is caused by the fetus passing through a loop of the cord and forming a knot on the cord. This is most likely to occur in a long cord. During delivery the cord may be drawn tight as the fetus descends causing anoxia and fetal death.

d. Placenta velamatonsa (velamentous cord insertion) – this is when the cord is inserted into the membranes instead of the foetal surface of the placenta.

e.Vasa praevia (vessels in front) – this is an obstetric complication in which foetal blood vessels cross or run in close proximity to the external cervical os. These blood vessels are at risk of rupturing when the supporting membranes rupture as they are unsupported by the umbilical cord or placental tissue

f. Battledore insertion of the cord – this when the cord is attached at the edge of the placenta in a manner of a table tennis bat instead of being inserted at the centre of the placenta.

Activity
Verbally practice how to pronounce the abnormalities of the placenta, membranes and cord.

You are on the right track. I know they sound quite difficult, but keep practicing until you get them completely right. Well done.

2.16 Immediate Care of the Newborn

Assessment of the newborn

Assess the baby by using Apgar Scoring at 1 minute and at 5 minutes after delivery. Check the security of the cord clamp, note time of delivery, weigh, height and head circumference of the baby. Wipe the baby dry and cover in warm linen to prevent hypothermia and put identity band. Make the baby comfortable as you nurse the baby with the mother. Encourage breast feeding as soon as possible after delivery for mothers who have opted to breastfeed their babies.

Essential Care of Every Baby

Apgar scoring

The Apgar score was designed by an anaesthetist Virginia apgar in 1953. The assessment should be done at 1 minute of delivery, to be repeated at 5 minutes and 10 minutes

Take note:

A score of 7-10/10 means the baby is in good condition. A score of 5-7/10 means mild asphyxia (Livida). A score below 1-4/10 means severe asphyxia (Pallida). A score of 0 means the baby is born dead. (Fresh still birth).

Table 1: Apgar Scoring System

Table SHOWING Apgar score.

New name	Traditional sign	0	1	2
A –Appearance	Color	Blue, pale	Body pink, extremities blue	Completely pink
P –Pulse	Heart rate	Absent	Slow(below 100)	Over 100
G- Grimace	Reflex response	No response	Grimace	Cry, cough, sneeze
A-Activity	Muscle tone	Flaccid	Some flexion of extremities	Actual motion
R- Respiratory effort	Respiratory effort	Absent	Slow, regular	Good, crying

Essential Care of Every Baby

This entails the daily care and monitoring of observation done on a newborn baby during the neonatal periods (28 days). The care should be carefully explained and demonstrated to the parents/support person so that when she and the baby are discharged, will know what to do and look for**.** The baby should be monitored by the midwife daily in order to detect any problems that may arise and to monitor any daily changes that may take place. This will also enable the midwife to detect any signs of infection.

Maintenance of effective respiration

The midwife should ensure that the infant's airway is clear. Chocking can occur during feeding if coordination is poor, and also following vomiting or regurgitation of mucus and feeds. Advise mother/support person to watch out for signs of choking which are: noisy respirations. To prevent the newborn from aspiration, excessive oral and nasal secretions can be gently suctioned with a bulb syringe. The mouth is suctioned first, then the nose. Teach the parents to use the bulb Syringe which is first compressed, then inserted in the mouth between the cheeks and gums and then the compression is gently released. Avoid touching the back of the throat, which will stimulate the gag reflex. The Bulb Syringe should be kept with the crib. Wall suction using low pressure setting may be used for deeper mucus that cannot be removed with the bulb syringe or for suctioning stomach mucus and fluid.

2. Position

The newborn should be placed in supine position (on his or her back), with head turned to the side with the lower arm stretched out in front to prevent the baby from rolling over onto its face and feet at the foot of the cot.

The newborn should never be left unattended in the supine position because of danger of aspiration from regurgitation of mucus or stomach fluid. Place the baby in a preheated cot beside the mother or sleep with mother on the bed to allow him to rest till feeding time.

Sleep Pattern: A normal baby sleeps for about 22 hours per day between feeds. When it is awake, it should be alert and responsive. A lethargic and irritable baby may mean that it has cerebral damage or sepsis (Fraser et al, 2003).

Provide Warmth

The room temperature of the Nursery or Mother's Room should be maintained at 24-26^{0}c with humidity in the range of 35% to 50% (Novak et al, 2003). The midwife should encourage the parents/support person to avoid unnecessary exposure of the newborn, dress the infant warmly and to consider room temperature when dressing the baby.

She should advice the parents/support persons that babies loose heat by evaporation anytime the skin is wet; by convention when the room is too cool or drafty or when cold oxygen is blown onto infant's face; by conduction when the infant's skin is in direct contact with cold hands or objects and by radiation when the infant's body heat is transferred to solid objects, such as windows or walls that are near but not in direct contact with the infant's body. The parents need to observe for hypothermia such as cool extremities, lethargy, apnoea, poor feeding and acrocyanosis.

To Promote Breastfeeding

The midwife should encourage the mother to breastfeed the baby in order to prevent hypoglycaemia. The mother should be taught the common breast feeding positions which include: Football position, Lying down, Cradling and laying the baby across the lap. Advice mothers on care of infants who are bottle fed. Aseptic techniques should be followed when preparing milk, milk should be tepid, and position babies at 45 degree angle. This position minimises the possibility of retrograde infection through the Eustachian tubes to the middle ear and also prevents aspiration (Novak et al, 1999). The brain is dependent on glucose for adequate functioning and Hypoglycaemia can result in neurological impairment. Teach the mother signs of hypoglycaemia which include; jitteriness, lethargy and temperature instability. The mother should feed the baby at least every 3 hourly or per demands.

Prevention of Infection

- **Skin care**

The skin provides a barrier to infection provided its integrity and PH balance are maintained. Teach the mother to observe for certain areas of the skin which include: Skin creases, folds, and buttocks. She should check for rashes, pastures, peelings and scratches. She should observe for skin colour for jaundice and cyanosis. The skin should be inspected daily to note any rashes, septic spots, excoriations or abrasions. Particular attention must be paid to flexures, between the digits and skin folds to note any abnormalities with the skin. Sometimes a harlequin colour change may be noted where the baby is red on one side of the trunk and pale on the other. This is caused by vasomotor instability and is of little medical importance. The finger nails should also be inspected for ragged nails and paronychia.

- **Baby Bath**

Bathing of the baby is done at least 2-3 times a day in order to provide comfort and prevent infections. To prevent heat loss by evaporation, conduction and convention, bathing of the baby should be done as quickly as possible in a warm environment. . Babies should be bathed in their own bath tub and not use common tubs to prevent infections. During baby bath, encourage the mother to observe for any abnormalities on the baby such as: skin rashes, nappy rash, jaundice, pallor, infections. Advise the parents to use mild soaps and Vaseline to prevent skin reactions. The temperature of the bath water should be 37C (felt by the parents' elbows) while the room temperature between 18-26C to prevent hypothermia.

- **Cord Care**

Teach the mother how to clean the cord after bathing the baby at least 2-3 times a day. Clean the cord stump and umbilical area using sterile cotton swabs and cool boiled water. Start from the base upwards using one swab at a time until cord is clean and dry. Daily Cord care helps prevent infections, helps in separation and falling off of the cord stump and quick healing of the raw area of the umbilicus. Advise the mother to observe for signs of infection such as oedema, erythema, or purulent discharge. Advise her not to apply topical applications such as baby powder or herbs because these could interfere with colonisation and delay separation. Advise her to keep the cord dry and not to be enclosed within the napkin or diaper where contamination by urine and faeces may occur.

- **Changing of Napkins**

A wet napkin or diaper is very uncomfortable for the neonate and therefore changing of napkins or diapers should be done in order to promote comfort, prevent nappy rash, excoriation and observe the stool. Advise the mother to wash her hands with soap and water after changing napkins to prevent faecal oral contamination. Advice the parents and support person on the importance of hand washing techniques before feeding the baby and after changing the napkins. They should also be advised on proper disposal of soiled napkins and linen.

A normal baby should pass stools and urine about six times a day. The consistency and frequency of passage of stool and urine should be noted as these will help in finding out whether the baby is over fed or under fed. The colour of stools should also be noted.

General Observations

The mother should be watchful on the danger signs that can occur to the baby and these include: difficulties in breathing, fever, chills fits, jaundice, failure to thrive, vomiting, inactive, diarrhoea, red swollen eyes, redness, pus or blood from the umbilical stump. Feeding pattern: The baby should be observed closely during feeding times in order to note how eager or reluctant it is towards feeding. The coordination between sucking and swallowing should also be observed. Abnormal feeding behaviour may signify cerebral damage, congenital abnormality or illness (Fraser et al, (2003).

Prevention of injury and accidents

Preventive measures should be undertaken to prevent baby from being infected or from accidents. To prevent falling, baby should be nursed in a cot with side rails and never left unattended. Move the infant in a cot rather than in the arms to prevent falls.

Restrict the number of people handling the baby.

Good hand washing practices should be observed before handling the baby. Encourage the mother to keep fingernails short to prevent scratches.

The temperature of bath water should be tested before bathing the baby and always add cold water before adding hot water to avoid scalds. Ensure the temperature of bottle feed is within normal range before feeding the baby. Avoid overexposure of the baby.

Do not bathe baby immediately after feeding to prevent regurgitation.

Drugs

If the infant is exposed to the HIV, a stat dose of Anti Retroviral should be administered to the infant as Prevention of Mother to Child Transmission of HIV. Nevirapine Syrup 0.3mg/kg Body Weight followed by a daily dose should be given for six months or until she stops breastfeeding. Septrin Syrup is also administered as prophylactic measures. Mother should be advised on importance of bringing the baby for Polymerase Chain Reagin (PCR) test at 6 weeks and one year six months.

Vaccinations

Vaccinations against Tuberculosis and Polio are to be given. Oral Polio Vaccine is administered in the first thirteen days of life while the Bacille Calmete Guerine (BCG) Vaccine should be given in the first year and repeated if scar not visible after three months of administration.

Advice to the parents/support persons

The following advice should be given to the parents/support persons on discharge:

i. Importance of taking the baby for Children's Clinic for growth monitoring and vaccinations. They should be advised to take the baby for children's clinic after 1 and 6 weeks and then every month.
ii. Danger Signs in the baby should be observed and bring baby to clinic if they occur. These include: difficulties in breathing, fever, chills fits, jaundice, failure to thrive, vomiting, inactive, diarrhoea, red swollen eyes, redness, pus or blood from the umbilical stump.
iii. Exclusively Breastfeed the baby in the first six month in order to promote growth of the infant. Advise her on proper positioning of the baby who includes: Football position, Lying down, Cradling and laying the baby across the lap.
For mother who opt to give artificial feeds, they should be encouraged to clean utensils thoroughly, hand washing techniques, give tepid milk, and good positioning of the infant while bottle feeding.
iv. Cord and eye care should be done at home using sterile techniques like sterile cotton wool and cool boiled water to prevent infections. Avoid use of antiseptic agents or other substances such as baby powder, methylated spirit, cow dung as these may prolong cord drying and separation and cause infections. Observe for reddiness and discharge and should be reported as they are signs of infection.

Activity

List the Information, Education and Communication you would give a mother who has just delivered on how to care for her New born baby.

Congratulations on your good memory. Take a five minute break at this point in time, when you return proceed to the following content.

Problems of a Newborn Baby

1. Asphyxia neonatorum

Asphyxia neonatorum is defined as a failure to establish spontaneous, regular respiration within a minute of birth (Fraser & Cooper, 2003). There are three main types of asphyxia namely; mild, moderate and severe.

Mild Asphyxia
It is of short duration. It is usually due to blockage of the airway with mucus and response to treatment is usually prompt. An apgar score of 4-6 indicate moderate depression and 7-10 no or mild depression

Severe Asphyxia
It is of long duration. It is due to prolonged lack of oxygen. An apgar score of 0-3 indicates severe Asphyxia.

Respiratory Distress Syndrome (RDS)

RDS is a condition, characterized by difficulty in breathing a few hours after birth, because of lung immaturity caused by deficiency of lung surfactant. It is mostly confined to preterm babies and asphyxiated babies exhibit signs of distress more rapidly.

Surfactant is a complex phospholipid secreted by the type II alveolar cells from about the 22nd week gestation though it not usually seen in the lung fluid until after 30 weeks. Measurement is expressed as a ration between Lecithin and Sphingomylin in tracheal fluid and a result of greater than 2:1 is indicative of lung maturity. To ensure normal lung function, adequate surfactant production is essential to reduce surface tension and keep the alveoli expanded following expiration.

Special Care for HIV Exposed Infants

Immediate prophylaxis (an appointment to come at six weeks)

For HIV exposed infants, a stat dose of Anti Retroviral should be administered. Nevirapine Syrup 0.3mg/kg Body Weight followed by a daily dose should be given for six months or until the baby stops breastfeeding. Septrin Syrup is also administered as prophylactic measures. Mother should be advised on importance of bringing the baby for Polymerase Chain Reagin (PCR) test at 6 weeks and one year six months (18 months).

For all HIV exposed babies, encourage the mother to continue giving the medication at home and to bring baby for Test at 6 weeks and 1 year 6 months. If breastfeeding she should continue giving the drug until a week after the baby stops breastfeeding. For those who opt for bottle-feeding, they should give the baby the ARV for 6 months.

2.16 Immediate Postpartum 0-6hours

This is the period extending from the time of complete delivery of the placenta and membranes and control of bleeding to six hours thereafter (Sellers, 2010).

The fourth stage of labour is referred to as the "recovery or stabilization" stage. This period begins with the delivery of the placenta and ends when the uterus no longer tends to relax. The forces involved are uterine contractions.

In this stabilization phase, the uterus makes its initial readjustment to the non-pregnant state. The primary goal is to prevent haemorrhage from uterine atony and form cervical or vaginal lacerations.

Take Note:

Atony is the lack of normal muscle tone. Uterine atony is failure of the uterus to contract.

A boggy uterus many indicate uterine atony or retained placental fragments. Boggy refers to being inadequately contracted and having a spongy rather than firm feeling.

Physiology of immediate post partum

The postpartum period is a critical transitional time for the woman on physiological, emotional and social levels. It is an important phase of a woman's reproductive life cycle.

Pelvic Organs

The principle change is uterine involution. The process of involution is aided by the release of oxytocin during breastfeeding.

- It is important to monitor the fundal height because a delay in involution may indicate infection or retained products of placenta
- Within the endometrial cavity, the decidua is cut off as a result of ischemia and is lost as the lochia flow. In the first few days postpartum, the lochia is a blood-tinged discharge and includes decidual shreds. It is called lochia rubra.

- After the fifth postpartum day, the lochia flow becomes serous and paler and is called lochia serosa. In the second postpartum week it becomes thicker, mucoid and whitish in colour called lochia alba, and usually ceases completely within four weeks of delivery

Breasts

- Colostrum, a yellowish alkaline secretion is secreted by the breast. It has high protein, vitamin A and immunoglobulin contents. Colostrum has a laxative effect on the infant and is an ideal, natural initial food.
- The normal flow of milk secretion begins during the third postpartum day. Continued production is maintained through suckling and the actual emptying of the ducts and alveoli.

Monitoring, care and recording of findings

The following are the points to consider as you nurse the woman in the immediate postpartum period:
After delivery make the mother comfortable and assess the mother's overall sense of wellbeing and mobility. Palpate uterine height, position and tone to note if it has contracted. Observe vaginal blood loss – whether known loss is consistent with maternal condition. Monitor temperature, pulse, respirations, blood pressure and consciousness level to rule out any complications. Monitor the urine output to avoid urine retention which can hinder uterine contraction after birth. Provide intravenous fluids and medications if need arises. Monitor bleeding from lacerations as well as amount of lochia, and assess level of pain and give appropriate medications. Facilitate and supervise early skin-to-skin contact and breastfeeding as soon as possible after birth, with particular emphasis on ensuring the baby's nose and mouth are not occluded and that parents also understand the importance of this. Assess bonding of mother and baby.

Minor disorders of puerperium

Postpartum 'blues' or transitory minor affective disorder

Definition - the weeping and emotional instability which occurs during the first postpartum week. Symptoms of postpartum include irritability, frequent and prolonged crying, and a sense of vulnerability which may continue for several weeks, mood changes, poor sleep.

After pains, or intermittent uterine contractions

This is a normal occurrence during the postpartum period after pains are caused by the release of the hormone called oxytocin and the subsequent relaxation and contraction of the uterine muscles. After pains can be quite intense for postpartum clients and are particularly painful for clients who have given birth previously (multiparous). After pains are caused by the loss of uterine muscle tone following numerous pregnancies. Clients may also experience after pains while breastfeeding as a result of nipple stimulation and the subsequent release of oxytocin. After pains generally last for a few days and can be alleviated by relaxation techniques and, if necessary, analgesics

Fatigue

Fatigue in the postnatal period is such a common experience for most mothers that the term 'postpartum fatigue' (PPF) has been coined to describe it. When new mothers experience extreme fatigue, it follows that their physical health, mental health, and social-wellbeing is negatively affected.

Urinary problems
During the first days postpartum, retention of urine with bladder distension is a frequent phenomenon. It is caused by several factors such as;

- Oedema of the urethra and bladder as a result of pressure in it by the descending head during the second stage of labour.
- Lacerations and pain in the vulval region may also inhibit the voiding of urine.
- The changed anatomy in the lower abdomen after birth may reduce the sensation of the bladder.

Perineal pains
Both in the immediate and later postpartum period, pain in the perineum and the vulva can be problematic for many mothers. It is as a result of trauma and/or overstretching of the perineum that occurs during the second stage of labour. Regular inspection of the perineum is recommended to treat promptly any wound infection.

Breast engorgement
In the early stages, incomplete emptying of the milk due to poor suckling technique may lead to engorgement of the breasts which become heavier, painful and firmer in consistency.
The breastfeeding technique should be corrected, with improved attachment of the infant to the breast.

2.17 Postnatal Care (6 Hours/6 Days/6 Weeks)

Postnatal care is the attention given to the general mental and physical welfare of the mother and infant during

Puerperium
Puerperium is defined as the period from the completion of delivery (end of the third stage of labour) to the end of the first six (6) postpartum weeks, during which time the woman's body returns to the normal non gravid state (Sellers 2010, p 583). This Care is directed toward prevention, and early detection and treatment, of complications and diseases. In addition, postnatal care also includes; counseling, advice, and services on breastfeeding, family planning

Activity
List at least 5 Minor disorders of the puerperium. After you do this, briefly state how you can manage each of them. All the best!

Good. You are progressing well, keep it up. Proceed with reading the Physiology of Puerperium that follows.

Physiology of Puerperium

A series of events take place in different systems of the body in an effort to reverse the effects of pregnancy to pre-pregnancy state.

Changes in the Uterus
Involution of the uterus
This is the process in which the uterus returns to its normal site, tone and position of non pregnant state by use of the following mechanism:

Ischemia:
After the birth of the baby & placenta, the uterine muscle & blood vessels contracts so the blood circulation decreases.
A localised anaemia

Autolysis:
Muscle fibres are digested by proteolytic enzyme, waste product then pass in to the blood stream and are eliminated by the kidneys. Lining of the uterus is cast off and is replaced first by granular tissue and then by endometrium.

Progress of change in the uterus after delivery
Weight of uterus versus diameter of placental site:

- End of labour 900gms, 12.5cms
- End of 1 WK 450gms, 7.5cms 2cms
- End of 2 WKS 200gms, 5cms 1cm
- End of 6 WKS 60gms, 2.5cm

Lochia – this is the discharge from the uterus during puerperium. Its reaction is alkaline which favours growth of organisms. The amount varies with each woman; the odour is unpleasant but not offensive. The lochia undergoes sequential change as involution progresses resulting in three types of lochia.

Lochia Rubra – Red in colour last 1-4 days consists of blood, chorion, decidua, amniotic fluid, lanugo, vernix caseosa and meconium.

Lochia serosa – Purple, lasts 5-9 days contains less blood more serum as well as leukocytes & organisms.

Lochia Alba – Creamish pale discharge lasts 9-12 days

Take Note:
It is important that you as a nurse realize the danger of retained products which is indicated by persistent red lochia.

Changes in other body system

Urinary tract
Physiological changes which occurred during pregnancy are reversed. The urinary tract is revived from pressure of delivery.

Alimentary canal
Heart burn improves due to hormonal fall and released pressure on the sphincter. Constipation presents for few days; painful perineum inhibits defecation.

Circulatory system
Blood volume decreases to pre-gravid level and blood regains its normal viscosity. Muscle tone of blood vessel improves cardiac output returns to normal and blood pressure returns to its usual level. The action takes place with in the first 24-48hours after the birth of the baby.

Respiratory system
There is full ventilation because lungs are no longer compressed by the enlarged uterus.

Endocrine system
Oxytocin – is secreted by posterior pituitary gland and acts up on uterine muscles and breast tissue. Its continuous act upon uterine muscle fibres maintains contractions of the muscle thereby reducing the placental site and presenting haemorrhage. In women who choose to breast feed their babies, the sucking of the infant stimulates further secretion of oxytocin and this aids the continuing involution of the uterus and expulsion of milk. After the placenta is expelled the circulatory level of human chorionic gonadotrophin, Human Placental Lactogen, estrogen and progesterone fall rapidly and this brings about a number of physiological changes.

Musculoskeletal system
The softened pelvic joints and ligaments of pregnancy gradually return to normal over a period of about 3 months. The abdominal and pelvic floor muscles gradually regain their tone with the assistance of postnatal exercise.

Psychological state
Emotional liability /suing of mood/ is very common during the early days of the puerperium. After delivery most women experience mood elation but a few days later they may be depressed and tearful. It is probably a reaction to the physical and mental stress of child birth.

Care of the mother and the new born baby

The objectives of this care are;

- To help the mother adjust to the changes that has occurred as a result of pregnancy, delivery, and childbirth.
- To assess health status of mother and new-born.
- To provide guidance and information about breastfeeding and care of the new-born.
- To provide immunization for the mother and the baby.

Care of the mother

Observations

- Postpartum checks include vital signs every 15 minutes for 2 hours, then every 30minutes for 1 hour and then hourly for 3 hours.
- After 6 hours of observation and if the condition for mother and baby is stable, a thorough physical examination is done on both and discharged from the hospital.
- The nurse should observe Lochia, for amount, character, odour, and the presence of clots. During the first 1 to 3 days, the lochia should be Rubra. A few clots are normal and occur due to pooling of blood in the vagina. After 3 to 4 days the lochia becomes Serosa. The nurse should therefore assess bleeding using sanitary pad count and observing for the actual bleeding during procedures.
- The nurse should also observe the mental status and signs of restlessness in the woman.

Sleep and rest
It is extremely important that the woman gets as much rest and sleep as she requires. Sleep and rest are essential in any healing process and are even more important in puerperium. They help the woman to overcome the physical and emotional stress the woman has gone through during labour and indeed pregnancy and this helps to promote healing. It is especially important that the woman sleeps well the first night. Pain relieve may be necessary for the after pains. Care must be taken with the choice of the analgesic and or the sedative as some of these are secreted in the breast milk. Hospital routines are arranged in such a way that the woman is able to get as much sleep as possible.

Diet
A wholesome well-balanced diet, rich in protein, vitamin and minerals in order to promote good lactation
Constipation should be avoided by taking plenty of roughage and nutritious drinks or fluids.

Ambulation
Because of the danger of venous thrombosis in the legs, women are encouraged to practice early ambulation. Early ambulation also helps with drainage of Lochia and involution of the uterus. Six to twelve hours after delivery, after she has had a good sleep, the woman should be encouraged to get out of bed and have a short walk around, perhaps to the toilet. Someone must accompany her in case she feels faint.

Breast care
The nurse notes the size and shape of the breasts and any abnormalities like reddened areas, sores, cracked nipples and engorgement. The nurse also palpates the breasts lightly for softness, slight firmness associated with filling, or firmness associated with engorgement, warmth or tenderness. The nipples are assessed for fissures, cracks, soreness, or inversion. The mother is advised to keep the breasts clean and wear a well - fitting bra to provide support to the breasts to limit stretching of supporting ligaments and connective tissue.

Abdomen and fundus assessment

The abdomen is carefully exposed and any rash or other abnormality is noted. The abdomen is then gently palpated, ensuring that the bladder is empty before palpation is done. The nurse palpates the uterus and notes the following:

- Is the uterus well contracted and hard, or relaxed and boggy.
- Is the uterus centrally placed or displaced to one side of the abdomen.
- Is the uterus tender to touch
- Is the uterus bulky
- Is there bleeding when the uterus is rubbed up.

The fundal height of the uterus is then measured with a fundal ruler from the top of the symphisis pubis to the top of the fundus. The reading is then compared with the previous day's reading to ensure that the uterus is involuting correctly. The fundus recedes about 1.25cm daily and should not be palpable after 10 to 12 days after delivery.

Bladder care

The woman will pass large amounts of urine in the first few days because the body no longer requires the excess fluids after delivery. A distended bladder may interfere with the normal contraction of the uterus and predispose the woman to haemorrhage. The woman should be allowed to pass urine as soon as possible after delivery.

General Hygiene

- The woman is allowed to take a bath after resting with support from the nurse or care giver.
- Vulva care is emphasized to prevent infection.
- The woman is advised to clean the vulva from front to back to avoid introducing infection in the vagina from anal region.
- Sitz baths are introduced if the woman had an episiotomy done or if she had laceration(s) which could have been sutured.

Emotional support

The mother should be allowed to take part in her own and baby's affairs. The midwife should recognize the woman's role and encourage support from significant others.

Promotion of maternal-child relationship

The mother should be allowed to be with the baby (rooming) and early and frequent breastfeeding should be encouraged to promote mother to child bonding.

Care of the newborn

The following are the most important considerations in care of the newborn;

1. Do Immediate Physical Assessment of the baby.
2. Keep the infant warm and dry during the examination.
3. Review the birth record.
4. Review the infant's general appearance; take note of whether or not the infant is small or large, fat or thin, tense or relaxed, active or still; are body and mouth blue or pink.
5. Assess bladder and bowel function, and skin colour.
6. Care for the umbilical cord (keep clean and dry).
7. Listen to the infant's cry (high, piercing cry can be a sign of illness).
8. Check the rate of breathing, heart rate, and temperature (especially important during the first six hours).
9. Heart rate should be between 120-160 per minute (place two fingers
10. Over the infant's heart or use a stethoscope).
11. Temperature is usually between 36.5-37.2ºC when taken under the arm. Hypothermia is temperature below 36.5ºC. It is very important to prevent heat loss after delivery; dry and cover the infant especially its head, and by keeping the infant close to the mother.
12. Check the infant's breathing, it should be without difficulty; normal rate is 30-60 breaths per minute.
13. Exclude preterm birth: delivery occurring before 37 weeks is defined as a preterm birth. Refer a preterm new-born to a specialized paediatrics department for assessment.

14. Exclude low birth weight: normal weight of a mature infant is usually between 2.5 and 4.0 kg.
15. Tell the mother and family the infant's weight.
16. Inspect the infant's body:
    - **Head:** note the sizes of the fontanelles (soft spots), suture, and moulding
    - **Eyes:** clean the eyes and place 2 drops of antibiotic eye drops in each eye
    - **Mouth:** look at the formation of the lips, feel the inside of the mouth; check suck reflex
    - **Spine:** note swellings or depressions
    - **Limbs:** note number and ability to move fingers and toes
    - **Reflex:** look for "startle" reflex (arms open normally when you clap your hand)
17. Exclude congenital anomalies and malformations.
18. Exclude neonatal bacterial infection and neonatal tetanus.
19. Exclude birth trauma.
20. Watch infant breastfeed: nipple and areola should be in the infant's mouth.
21. Administer Vitamin K and antibiotic eye drops.

Danger signs in the newborn

The following are the things to look out for in the newborn, and should be reported to the Doctor as soon as they are noticed;

- Poor feeding or sucking
- Sleeping all the time
- Fever or hypothermia
- No stool by third day
- Blueness of the lips or skin
- Jaundice (yellow skin)
- Persistent vomiting; vomiting with a swollen abdomen
- Difficulty establishing regular breathing
- Eye discharge
- Watery or dark green stools with mucus or with blood

Take note:

Refer to a doctor if an infant has any of the above signs

- Counsel Mother about Infant Immunization Schedule
- BCG to prevent tuberculosis should be given at birth or within 13 days (or at the earliest contact).
- Provide information to the mother about where her baby can receive BCG injection and when to take the infant.
- Oral Polio Vaccine (OPV) should be given at birth.
- DPT, HIB (Haemophilus Influenza B) and Hepatitis B vaccine at is given at 6, 10 and 14 weeks

Enrolment of the mother to chronic HIV care at six weeks

According to the national policy on PPTCT the mother will need support.

As much as possible, a comprehensive package of care and support should be provided to HIV positive women and their families. At 6 week review of the mother and baby, or when mother brings baby for vaccination, refer the mother back to the HIV clinician for further follow up.

This support includes:

- Pneumocystis Carinii Pneumonia prophylaxis with Cotrimoxazole as per national guidelines.
- Prompt screening, treatment and management of opportunistic infection.
- Good referral networks for mothers to access all care available to HIV infected people including HAART if applicable through the ARV programme.
- Psycho-social support to mothers and their families:

- Referrals should be made to community-based groups such as;
- People living with HIV/AIDS (PLWHAs), peer support groups, post-test clubs, legal services, churches, and faith-based organisations and legal counsellors

- When making referrals, give the women the name of the organisation, an address, and a contact person. A short referral note should also be provided.
- Offer continued education and counselling of mother and her partner on vital aspects of PPTCT. Issues to address should include;
    - The risks of HIV positive women getting pregnant,
    - Medical care,
    - Good nutrition,
    - Infant feeding, and
    - Prevention of STIs as well as promotion of safer sex practices.

Breast feeding

As a service provider, it is important for you to support successful breastfeeding practices. The benefits of breastfeeding can promote and protect the health of both infant and mother. Breastfeeding should be initiated immediately after delivery. Encourage Optimal Breastfeeding Practices by teaching and helping the mother to:

- Breastfeed as soon as possible after birth, and to let the baby remain with the mother for at least several hours following delivery.
- Breastfeed the baby on demand.
- Breastfeed exclusively for the first six months, giving no water, other liquids, or solid foods.
- Give complementary feeds after six months (breastfeed before giving complementary feeds).
- Continue to breastfeed for up to two years, and beyond, if possible.
- Continue breastfeeding even if the mother or the baby becomes ill.
- Avoid using bottles, pacifiers (dummies), or other artificial nipples.
- Eat and drink sufficient quantities of available nutritious foods to satisfy her hunger and thirst.

- In case of any difficulties in breastfeeding encourage the mother to seek medical attention early.
- As a service provider, you have to bear in mind the ten steps to Successful Breastfeeding as in the table below

The ten steps to successful breastfeeding

- Have a written breastfeeding policy that is routinely communicated to all health care staff.
- Train all health care staff in skills necessary to implement this policy.
- Inform all pregnant women about the benefits and management of breastfeeding.
- Help mothers initiate breastfeeding within a half-hour of birth.
- Show mothers how to breastfeed and how to maintain lactation even if they should be separated from their infants.
- Give new-born infants no food or drink other than breast-milk, unless medically indicated.
- Practice rooming-in—allow mothers and infants to remain together—24 hours a day.
- Encourage breastfeeding on demand.
- Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.
- Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

HIV/AIDS and breast feeding (Prevention of Mother to Child Transmission)

The following are the schedules of feeding where HIV in the mother is concerned;
Infant Feeding Options for a Mother who is HIV Positive and whose infant is HIV negative or of unknown HIV status.
Exclusive breastfeeding is recommended for HIV positive women for the first six months of life unless exclusive replacement feeding is acceptable, feasible, affordable, sustainable and safe (AFASS).

After 6 months, appropriate complementary food should be introduced and breastfeeding continued for the first 12 months of life. Breastfeeding should then only stop once a nutritionally adequate and safe diet without breast milk can be provided. When HIV positive mothers decide to stop breastfeeding (at any time) they should do so gradually within one month.

- All HIV exposed breastfeeding infants whose mothers were on ARV prophylaxis or whose mothers did not receive ARV prophylaxis must be started on Niverapine (NVP) prophylaxis from birth and continued throughout the breastfeeding duration. NVP should be stopped one week after complete cessation of breastfeeding.
- All HIV exposed breastfeeding infants whose mothers are on ART, must be started on NVP prophylaxis from birth until 6 weeks of age.
- All HIV exposed non-breastfeeding infants must be started on NVP prophylaxis from birth until 6 weeks of age regardless of whether their mothers were on prophylaxis or not.

Infection prevention practices

Infection prevention is the process of placing barriers between the susceptible host (person lacking effective natural or acquired protection) and the microorganisms, in order to prevent the spread of infection from person to person or from equipment, instruments and environmental surfaces to people which can be achieved using physical, mechanical and chemical processes.

Purpose

- The purpose of good infection prevention practices is;
- Reduce risk of disease transmission to healthcare, clients, patients, and community members
- Protect healthcare workers at all levels—from physicians and nurses to cleaning, housekeeping, laboratory staff and all paramedical staff.

Infection is controlled/ prevented through many ways including;

- Hand washing
- Use of protective equipment
- Safe handling of sharps and needles
- Processing of soiled items
- Decontamination
- Cleaning
- High level disinfection
- Storage
- Sterilization
- Waste disposal
- isolation

Therefore, as a nurse you should was hand before and after getting in contact with a client. You must wear protective equipment. After delivery you have to clean the delivery bed and dispose the linen appropriately in readiness for processing by decontaminating it. As for medical wastes dispose them in appropriate bins as per colour code
Decontaminate gloves before disposal. Decontaminate the instruments, there after clean and dry them in reediness for autoclaving. Sharps to be placed in sharps boxes. Take care of the woman by cleaning her up and application of a sterile sanitary pad. Give information education and communication on self-hygiene and baby's hygiene during the postnatal period

Vitamin a Supplementation

- Give a high dose of Vitamin A (200, 000 IU) supplementation to the mother after delivery.

Home Visitation

Home visitation postnatally is important to assess the welfare of the woman and the baby.

First contact:

- If the mother is in a facility, she and her baby should be assessed within one hour of birth and again before discharge.
- If birth occurs at home, the first visit should target the crucial first 24 hours after birth.

Follow up contacts are recommended at least at 2-3 days, 6-7 days, and at 6 weeks

- Extra contacts for babies needing extra care (LBW or those whose mothers have HIV) should have two or three visits in addition to the routine visits.

Activity
Using the anatomical models of the mother and baby in your Skills Laboratory and your Learning guides, practice how to do Physical examination of the mother and the baby following the right procedure.

2.18 Medical Disorders in Pregnancy, Labour and Puerperium

Malaria in Pregnancy

Malaria is a protozoa infection of the genus plasmodium. It is transmitted through a bite of an infected female mosquito belonging to the genus Anopheles.

This is the same malaria that affects anyone else, except this time it is occurring in a pregnant mother who is susceptible of the infection because of her supressed immunity. In pregnancy the parasite has a tendency of hiding in the placenta where it causes destruction and impairs the function of the placenta, hence posing danger to the growing fetus.

Signs and Symptoms of Malaria

Malaria is classified as either **uncomplicated** or **complicated** based on the signs and symptoms as listed below.

Uncomplicated Malaria

This classification presents with the following clinical features;

- Fever (above 37.5^{o}C)
- Headache.
- Sweats and chills
- Body pains
- Acute gastroenteritis
- Nausea and vomiting
- Aching joint pains
- Backache
- Generalised discomfort.

Complicated / severe malaria

This classification presents with the following clinical features;

- Severe anaemia
- Jaundice
- Drowsiness / lethargy
- Shock
- Convulsions
- Respiratory distress
- Unconsciousness / coma
- Change in behaviour
- Hyperparasitaemia
- Prostraction (inability to sit or stand without support).
- Abnormal bleeding
- Dehydration
- Hepatomegally
- Splenomegally

- Persistent / excessive vomiting.

Malaria in pregnancy is frequently asymptomatic. Even if a woman has malaria, she may still test negative for parasites in the blood, as the parasites tend to go into the placenta.

Placental malaria can have serious impact on both the mother and the fetus. These serious impacts include;

- Maternal anaemia
- Maternal death
- Spontaneous abortion
- Cerebral malaria
- Still birth
- Prematurity
- Low birth weight babies
- Intra-uterine growth retardation
- Congenital malaria in neonate
- Jaundice in neonate
- Kernicterus, if fetus is exposed in utero.
- Pulmonary oedema.

Management of malaria in pregnancy

Management of malaria in pregnancy consists of

- Medical and
- Nursing care

Aims of management

- To isolate the causative organism and treat it
- To bring the pregnancy to term and ensure a healthy live baby being delivered.
- To offer psychological care to the client.
- To prevent complications
- Medical management

Diagnosis of malaria

Early and adequate diagnosis is crucial in malaria case management. Diagnosis can be done in two ways, either by;

- Clinical and/or
- Parasitological confirmation (Laboratory)

Clinical diagnosis

- This diagnosis can be made by taking a careful history and physical examination.
- A complete history should include common symptoms of malaria, age, place of residence, recent history of travel, previous treatment(s) and other illnesses.
- This type of diagnosis is based upon only in the absence of a diagnostic facility (Laboratory). Otherwise it should be followed by a confirmatory laboratory investigation.

Parasitological confirmation

This is when a laboratory investigation is made to confirm the diagnosis. This is done by use of a;

- Microscope

> **Take Note**:
> A negative slide may not always indicate absence of malaria infection) or Rapid Diagnostic Test (RDT).

Supportive investigations: This includes Hb monitoring.

Treatment of malaria in pregnancy

According to the National policy on treatment of malaria, it is treated based on the classification whether;

- Uncomplicated or
- Complicated.

Uncomplicated malaria

First line treatment

- Tablets Quinine 600 mg three times daily for 5 - 7days orally in the first trimester.
- Tablets Sulfadixine 500mg-Pyrimethamine 25mg (Fansidar) 3 tablets taken at once as a single dose in second and third trimester.
- Coartem course in second or third trimester.

Second line of treatment

- Quinine injection is used in cases of failure to the first line drug in all age groups. Doses are as follows;
    - Intramuscular injection; 10 mg/kg bodyweight diluted in saline or water for injection (to a concentration of 60-100 mg salt/ml), repeated after 4 hours, then 8 hourly.

Complicated / severe malaria

In this class of malaria, Quinine is the drug of choice for all age groups and all categories of patients.

The drug is administered intravenously. A loading dose of 20 mg/kg body weight diluted in 10 ml of 5% or 10% dextrose (or Isotonic fluid if hypoglycaemia is excluded) per kg body weight by intravenous infusion over 4 hours.

After 8 hours, maintenance dose of 10mg/kg body weight given over 4 hours, repeated 8 hourly, until patient can swallow or after resolution of coma.

Then give oral quinine 10mg/kg body weight 8 hourly to complete 7 days course of treatment.

Supportive treatment

- Analgesics such as Tablet Paracetamol 1g three times daily for 3 days to relieve pain.
- Tablet Metronidazole 200mg – 400 mg, 3 times daily for 5 days to treat other infections that may set in.
- Antihistamines such as promethazine 25 mg intramuscularly stat or whenever necessary to relieve nausea and vomiting.

Intermittent Presumptive Treatment (IPT)

- Pregnant women are given IPT to prevent malaria in pregnancy.
- The drug of choice is Sulfadixine 500mg-Pyrimethamine 25mg (Fansidar).
- It is given as an adult dose (3 tablets) after quickening (16 weeks following the last menstrual period). Two more doses are given at least 4 weeks apart, during the second and the third trimester.
- The total number of doses recommended for the entire duration of pregnancy is three doses.

Take Note:
HIV positive pregnant women on Cotrimoxazole prophylaxis for Pnuemocystis Jerovecii should not be given Sulfadixine 500mg-Pyrimethamine 25mg (Fansidar). This is because Co-trimoxazole has protective effects against malaria.

Nursing Management

Environment

- Nurse the woman in a quiet, well lit, ventilated and warm

Nutrition and hydration

- Give the woman fluids to promote hydration
- Give nutritious foods rich protein, carbohydrates and vitamins

Hygiene

- Encourage the woman to brush teeth, bath and change clothes.
- Make the bed for her and change linen when soiled.

Exercise and rest

- Encourage the woman to walk around if the condition allows or do exercises in bed.

Psychological care

- Reassure the woman
- Give message of hope
- Talk to her and attend to her concerns.
- Explain whatever is being done on her to make her comfortable

- Get her consent whenever doing procedures on her.

Observations

- Vital signs will be observed, that is, temperature, pulse, respiration and blood pressure.
- This will be done 4 hourly to determine if the condition is improving and if so, then the interval of observations will switch to 12 hourly.
- The skin, sclera and conjunctiva will be observed for pallor and yellow discolouration to rule out anaemia and jaundice indicating excessive destruction of red blood cells and increased levels of unconjugated bilirubin.
- Fetal wellbeing will be observed through auscultation of the fetal heart sounds from 24 weeks gestation and noting fetal movements in the mother using fetal kick charts if the mother is conscious and the pregnancy is above 16 weeks of gestation.
- This will be done to rule out fetal distress and death.

- The client will be observed for commencement of labour pain such as backache, regular rhythmic uterine contractions, as well as per vaginal bleeding or draining as such may predispose her to abortion or premature delivery. If present, a doctor is informed immediately.
- The patient will be advised to have a complete bed rest.
- She will be observed for signs of hypoglycaemia such as acidotic breath, ketonuria and nervousness.
- Urine output will be monitored at least hourly to rule out renal failure. Urine output should be at least 30 ml per hour.
- Level of consciousness will be monitored by the use of a glascow coma scale, if the patient is unconscious it determines improvement of the condition.

Prevention of malaria

At individual and family level

- Spraying of houses with effective insecticide.
- Promoting of insecticide treated nets usage as this provides 50% protection against malaria than the untreated nets that provided only 25% protection.
- Giving of IPT to pregnant women starting from just after 16 weeks of gestation.
- Closing windows early (around 17:00hours) to prevent mosquitoes from entering the house.

At individual and family level

- Avoiding staying outside the house late in the night (that is from 22:00 hours onwards).
- Wearing long sleeved clothing to avoid mosquito bites in the night.
- Treating all family members who have clinical malaria as quickly as possible.

At community level

- Household and public place residual spraying with effective insecticide at least annually.
- Sleeping under ITNs
- Clearing of stagnant water in the surroundings
- Use of mosquito repellent oils to prevent mosquito bites.
- Covering up with clothing in the evenings and early hours of the morning, including covering of babies on the backs of caretakers.
- Encouraged to seek medical attention promptly whenever they are sick.
- Encourage, after birth, to protect the new babies with ITNs (CBoH, 2002).

Diabetes Mellitus (DM) in pregnancy

Definition - Diabetes Mellitus is an abnormal condition of metabolism caused by a deficiency of insulin, which interferes with the carbohydrate, fat and protein metabolism in the body.

Classification of Diabetes Mellitus

The “WHO” classification is as follows;

Gestational diabetes

This is diabetes which is diagnosed for the first time during pregnancy

Overt diabetes

This is divided into three types as follows;

- **Type 1** – Insulin Dependent Diabetes Mellitus
    - It is DM present from young age
    - It is a severe form of DM
- **Type 2** – Non-Insulin Dependent Diabetes Mellitus
    - Is Diabetes Mellitus in the older and obese persons
    - It is a moderate form of DM
- **Type 3** – impaired glucose tolerance
    - It is a mild form of DM

Effects of DM on the fetus

- In a pregnant woman the quantity of glucose transfer to fetus increases
- Fetus response is prompt by increasing insulin production
- The increase in fetal insulin results in excessively low fasting sugar level in the fetus
    - NB: this could be the cause of sudden unexplained fetal death in diabetic mothers particularly in the last weeks of pregnancy
- When increased blood glucose level in a diabetic mother persists, the fetal insulin production increases. This leads to;
    - An excessive amount of glycogen deposition.
    - Excessive adipose tissue
    - Fetal macrosomia
- Much of the glycogen and adipose deposition is laid down in the fetal shoulder girdle area.
    - This accounts for the difficulty often encountered when delivering the shoulders of a baby of diabetic mother, who is also a big baby.

Effects of pregnancy and labour on Diabetes Mellitus

Pregnancy is a diabetogenic state, therefore if the mother is already diabetic; the condition worsens during pregnancy leading to

- Retinopathy and
- Nephropathathy
- Effects of pregnancy and labour on dm

- Control of DM is difficulty due to placental hormones; HPL, oestrogen and cortisol which are anti-insulin.
    - At 30 weeks insulin level reaches peak.
    - After 30 weeks insulin demand increases
- There is often early nausea and vomiting leading to hypoglycaemia in diabetic mothers receiving insulin.
- Altered carbohydrate metabolism throughout pregnancy can change dramatically after labour.
- Lose of glucose in urine throughout pregnancy due to increased glomerular filtration rate is evident.
- As fetus grows, mother requires more carbohydrates; therefore ketosis is more easily induced.
- Reduced insulin and fasting blood sugar.
- There are extra demands on glucose and insulin during labour, and when fetus is no longer in utero.

Effects of Diabetes Mellitus on pregnancy

In early pregnancy

- Raised incidence congenital fetal abnormalities, the common one being caudal regression/deletion syndrome (sacral agenesis)
- Unexplained increase in infertility.

In late pregnancy

- Intrauterine fetal death (IUFD) in the last 4-6 weeks due to maternal acidosis and placental insufficiency.
- Preterm labour is prevalent.
- Development of polyhydromnios in 2nd half of pregnancy.
- Prone to infection such as Moniliasis and bacteria are twice as frequent in diabetic women
- Disrupted maternal fluid balance

- Maternal Hb is bound to glucose
- Perinatal mortality is increased in 2nd half of pregnancy
- Likelihood of developing pre-eclampsia is increased in the 2nd half of pregnancy
- Fetal macrosomia occurs, leading to;
    - CPD resulting in prolonged and possibly obstructed labour.
    - Shoulder – girdle dystocia.

Effects on neonate

- Early neonatal death
- Congenital malforrmation
- Asphyxia neonatorum
- Hypoglycaemia
- Hypocalcaemia, with carpo-pedal spasms (tetany).
- Hyperbilirubinaemia
- Polycythermia
- Respiratory distress
- Skin infections
- Bleeding from the thick umbilical cord
- Lethargy.

Complications of Diabetes Mellitus in pregnancy

- IUFD
- CPD
- Prolonged labour
- Obstructed labour
- Macrosomia
- Congenital abnormalities
- Intra-uterine growth retardation.
- Complications of DM in pregnancy
- Prone to infection
- Hydramnios
- Pre-eclampsia
- Hyperbilirubimaemia
- Asphyxia neonatorum
- Polycythermia.

Management of diabetes mellitus in pregnancy

- Management of diabetes starts in the pre-conceptional period.

  A known diabetic woman or a woman, who has impaired glucose tolerance, should avoid becoming pregnant until glycosylated haemoglobin with in normal range. This is believed to reduce the chance of fetal congenital defects and to obtain optimal control of diabetes.

Control of diabetes mellitus in pregnancy

Aims

- To maintain euglycaemia for as much of the day as possible.
    - This eliminates maternal death
    - Reduces perinatal death significantly
    - Reduces chance of large and fat babies.
- To avoid or to detect major congenital defects.
    - Ultrasound examination should be made between gestation weeks 10 and 14.
- To determine the most appropriate gestational time for childbirth.
- To ensure that the neonate can receive the appropriate intensive care if required.

- The woman should be well informed about her condition
- Encourage hospital delivery.
- Diet should be controlled to provide at least a daily intake of about 100g protein and 200g carbohydrate.
- Administer insulin, (short acting)
- Daily glucose monitoring
- If condition advances admission to hospital is necessary.
- Maternal and foetal wellbeing should be monitored.
- If fatal complications threaten, TOP many be performed

Management of Diabetes Mellitus at time of delivery

- Psychological support
- The decision regarding the best way to deliver the baby is controversial, but the trend is towards vaginal delivery.
- Depending on the condition the woman can have a spontaneous vaginal delivery or she has to deliver by other means.
- Induction of labour may be done in some cases, and if labour is not established within 6 hours, if fetal distress or lack of progress occurs, caesarean section is performed.
- In some cases an elective caesarean section is performed at 37 weeks
- In case of any complications during pregnancy, C/S is done as well.
- Apply standard management of labour as discussed earlier in the unit.
- Control of patient's blood glucose levels is essential as maternal hyperglycaemia leads to an increase in foetal insulin which will cause neonatal hypoglycaemia.
- Intravenous 5% or 10% glucose infusion is given and insulin is also administered depending on the preceding total daily insulin needs
- Glucose levels are checked every 1 – 2 hours
- Continue monitoring of maternal and foetal wellbeing till delivery.

Cardiac disease in pregnancy

Cardiac disease is the disease of the heart accompanied by lesions usually made worse during pregnancy and labour.

Cardiac disease is an uncommon problem in pregnancy complicating to less than 1% of maternal morbidity and mortality rates. The prognosis of cardiac disease in pregnancy is good if there is proper management. Though the prognosis is good, it is important to note that because of slowly progressive nature of most forms of cardiac disease reduces the life expectancy of the patient and each pregnancy places an additional strain on the heart.

Cardiovascular changes in pregnancy

In normal pregnancy the cardiovascular dynamic alters in order to meet the increased demands of the feto-placental unit. This increases the workload of the heart quite significantly. The major cardiac changes that occur are;-

- An increase in cardiac output by 40%
- An increase in blood volume by 35%
- A decrease in total peripheral resistance

These changes commence in early pregnancy and gradually reach a maximum at 30wks, were they are maintained until term. Oestrogen and prostaglandins are thought to be mediators in this homodynamic during pregnancy.

Healthy pregnant women are able to adjust to these physiological changes quite easily. In women with co-existing heart disease, the added work load precipitate complications especially during labour where there is an increase in cardiac out as

a result of uterine contractions, also after delivery due to shift of blood about 1 litter from the uterine to the maternal systemic circulation.

Predisposing factors to cardiac disease in pregnancy

Rheumatic heart disease – This causes inflammation and scaring of the heart valves which results in valves stenosis.

Physiological changes in pregnancy-Physiological changes in pregnancy alone can burden the heart and results in cardiac problems.

Myocarditis-Viral infections associated with malnutrition.

Bacterial Endocarditis – during healing there will be fibrosis of the endocardium

Congenital Abnormalities - such as pulmonary stenosis

Factors that aggravate cardiac disease

These factors are also often aggravated by the cardiac condition and by pregnancy. These factors are:-

Anaemia –Because of the reduced oxygen carrying capacity and the demand for the increased blood flow rate so, the heart has to beat even faster to meet the demand.

Respiratory infection-causes reduced oxygen.

Febrile diseases –causes acceleration in the heart functions.

Excessive exercises-increases strain on the heart.

Emotional upset-causes strain on the heart.

Hypertension and Pre-eclampsia-due vascular constriction it causes the heart to pump blood fast with increase in pressure.

Classification of Cardiac Disease

It is classified under 4 grades;-

Grade 1-There are no symptoms of cardiac disease, there is no limitation on physical activity although lesions can be found during pregnancy.

Grade 2-The person is comfortable at rest but ordinary physical activities cause palpitations, dyspnea and fatigue.

Grade 3-The person is comfortable at rest but less than ordinary physical exertion causes dyspnea and fatigue.

Grade 4-Even at rest, the person has dyspnea and symptoms of cardiac insufficiency.

Signs and symptoms of cardiac disease

- Oedema
- Cough and heamoptysis

- Orphopnoea that is breathlessness, particularly when lying down
- Progressive dypnea or also paroxysmal nocturnal, dyspnea caused by fluids in the lungs when lying down at night.
- Fatigue
- Cyanosis
- There can be chest pains at times.
- Palpitations and bounding pulse.
- Crepitations in the lungs
- Irregular pulse
- Tachycardia (at rest pulse will be 100beats/min)
- Cyanosis
- Clubbing of fingers

Investigations

Investigations are better done early at antenatal clinic. This includes;

- Electrocardiophy
- To rule out cardiac arrthymias
- To rule out cardiac infarction
- To rule out bradycardia

Management of cardiac disease

Aims of management

The following are the aims when managing a patient with Cardiac disease in pregnancy;

- To prevent congestive cardiac failure
- To assess the need for prophylactic treatment against sub-acute bacteria endocarditis.
- To prepare the patient for labour.
- To provide adequate treatment through pregnancy, labour and puerperium.
- To return the woman to at least the cardiac grade she was in before pregnancy.

In order to address the above objectives, the following are done;

A. Pre-conception care and advice

- A Woman who knows she has a cardiac disease will need a pre-conception counselling.

- Before becoming pregnant she will seek advice from the cardiologist and obstetrician so that the risks of her condition can be discussed.
- The woman should be helped to control obesity, cut down smocking
- Chose a diet which will prevent Anaemia in order to reduce the risk
- Patient will be advised on family size, which should be limited as the risks increases with each pregnancy.
- Encourage client to report as soon as she realize she is pregnant

B. Antenatal Care

The care of a cardiac patient involves complete team work, from the obstetrician, the physician, the anaesthetist the paediatrician and all midwifery nursing.

The diagnosis of cardiac disease in some women may only be made during Antenatal visit.

The midwife may detect the problem when taking the woman's history though some signs of cardiac disease will mimic signs of homodynamic changes

During Antenatal, women with cardiac disease are monitored more frequently than normal pregnant women .This helps to maintain a steady homodynamic state to prevent complication as well as promote physical and psychological wellbeing.

Joint clinic by the obstetrician and cardiologist are usually every two weeks until 30wks gestation, then weekly until delivery.

At each visit the severity of the heart lesion is assessed by clinical examination.

Evaluation of fetal wellbeing is also done and includes;

- Ultrasound to confirm the gestation age and detect any congenital abnormality
- Assessment of fetal growth and amniotic fluid volume
- Monitoring fetal heart rate at each visit

Physical care

All women with heart disease may require additional rest during pregnancy.

In late pregnancy, women may require admission to hospital for rest and close monitoring.

Psychological care

Psychological support by the midwife very important especially if there are complications which require early admission to the hospital

Dietary advice

The midwife should give adequate advice on diet such as cholesterol free and restrictions on sodium rich foods

- Advice on weight gain because will increase additional strain on the heart.

- Encourage food rich in iron to prevent anaemia
- A dietician may be involved for nutritional advice.

Prevention of infection

- Infections often cause pyrexia and tachycardia which will increase the cardiac output and add strain on the heart.
- Advice woman on early identification of respiration, urinary and vaginal infections and on necessity of seeking treatment early
- Early dental treatment to detect and treat caries which may precipitate endocaditis
- Prophylactic treatment of endocaditis is recommended and prophylaxis treatment of malaria by giving fansida at 16 weeks until receive the 3rd dose at 4 weeks interval
- Aseptic technique to be maintained and reduce number of V/E in labour to reduce infections
- Follow IP principles.

Antithrombotic therapy

Wafarin is teratogenic in pregnancy and predisposes the woman to bleeding.

Hepain is the drug of choice; it does not cross the placenta. If bleeding occurs an antidote of protamide sulphate is given.

Intrapartum Care

First stage of labour

- A co-coordinated team of a midwife, cardiologist, obstetrician, anaesthetist and neonatologist will be present.
- Women with heart disease often have a rapid spontaneous vaginal delivery unless there is a complication caesarean section may be indicated
- Blood may be x-matched in case needed.
- Ensure oxygen and resuscitation equipment are available.

Observations

- Patient is monitored using partogram.
- Monitor maternal wellbeing.
- Observe pulse, any rise above 110/min between uterine contractions indicates possible decompensation and may require Digoxin 0.5 – 0.75 mgs, observe respiration rate every 15 minutes and monitor blood pressure.
- Heart may be monitored by ECG.
- Deviation from normal such as breathlessness, tachycardia are reported.

- Blood and urine tests are utilized to determine the metabolic changes in labour such as platelet count and urine to rule out hypertension.
- Monitor urine output.
- Monitor fetal wellbeing ½ hrly and use a partogram

Positioning

Encourage upright or lateral position to prevent maternal hypotension and fetal brachycadia if there is compression on aorta by the gravid uterus. This reduce cardiac output by inhibiting venous return to the heart

Pain Relief

- Women with heart disease have rapid delivery but the midwife should provide technique to relieve stress.
- Epidural anaesthesia may be given which has effective form of analgesia that decreases cardiac output and heart rate.
- Nitrous oxide, oxygen and pethidine are considered to be safe. Trilene is the most effective because it does not reduce oxygen saturation in the blood

Induction of labour

- In case of induction, prostaglandins should be used carefully as they are potent vasodilators and may cause a marked increase in cardiac output.
- Oxytocin may cause fluid retention maintain charts for fluid intake and output.
- Mainly, induction is not considered only when the benefits outweigh the disadvantages; a failed induction may lead to caesarean section.

Second stage of labour

- Second stage of labour should be shorten without due exertion on the mother.
- Oxygen may be given continuously
- Instruct the mother not to push as normal uterine action will be able to push the fetus.
- Second stage may be shortened by use of vaccum or forceps with episiotomy, if maternal condition worsens.
- Avoid lithotomy position because there will be increased venous return to the heart and this will increase strain on the heart.
- Preferably left lateral position is used for delivery.

Third stage of labour

- Actively managed owing to the risk of PPH
- Oxytocin is the drug of choice

- Avoid egometrine because there will be constrictions of blood vessels which may increase strain on the heart
- Continue observing the patient at frequent intervals and promote rest

Post natal care

- During the first 48 hours following delivery the heart must cope with the extra blood from the uterine circulation and it is important to monitor the woman's condition.
- Vital signs 4hourly of temperature to detect early detection of infection.
- Continue observations of cardiac failure such as cynosis.
- Maintain bed rest for the client.
- As condition improves allow gradual ambulation.
- Encourage physiotherapy to prevent venous thrombosis.
- Continue with antibiotics.

Breast Feeding

- Breast feeding is not contra-indicated unless the woman is in heart failure.
- Encourage and allow for grade 1 & 2 to breast feed then for grade 3 &4 if condition is worse find a means of feeding the baby.

Family planning

- Allow woman to discuss the implications of future pregnancies with the cardiologist and obstetrician.
- Advice on family planning
- Allow patient to choose a method which is suitable for her.
- Pill is contra-indicated because of the steroid in it which may increase cardiac overload.
- IUD is contra-indicated because of risk of infection.
- BTL is recommended after 2-3 pregnancies.
- Barrier methods like condoms are also recommended.

IEC

- IEC on postnatal check up
- Family should be involved in the care of the patient.
- Encourage patient to book early in subsequent pregnancies.
- Grade 1 and 2 can be discharged after 10 days of stable.
- Grade 3 and 4 can be discharged after 21 days.
- Care of the baby and examine very carefully for any signs of hereditary heart disease.

Complications
Cardiac failure-The risk of cardiac failure increases.

- Pulmonary oedema may accompany cardiac failure.
- Thrombo-emboli - Women with artificial valves are at risk of developing thrombo-emboli unless anticoagulants are given
- Pre-term labour
- Intra-uterine fetal death – due maternal hypoxemia
- Possibility of baby having congenital heart abnormalities.

Tuberculosis and pregnancy
TB is one of the most wide spread and most serious of all human infectious diseases. Today TB is more common than ever before because of poverty, inequalities, inadequate health services, HIV/AIDS pandemic and poor economies especially in many of the developing countries especially in the tropics. WHO declared tuberculosis as a Global Emergency in 1993 because of its relentless spread throughout the world.

Epidemiology
The WHO has estimated that, one billion people will be infected with the tubercle bacillus, while 200 million people will develop clinical tuberculosis and 35 million will die from it over the next 20 years, if tangible control measures will not be in place. In Zambia tuberculosis accounts for about one in six adult deaths, while 1/3 carry the TB bacteria in their bodies.

Aetiology
The causative organism of tuberculosis is a tubercle bacillus known as mycobacterium tuberculosis. It was first isolated and described by Robert Koch in 1882. There is also a closely related species isolated from cattle that can cause human tuberculosis called mycobacterium bovis. The tubercle bacilli are aerobic, non motile and non- sporing bacteria.

Mode of spread
Infection of humans with mycobacterium tuberculosis usually occurs by;

- Inhalation
- Ingestion
- Traumatic inoculation
- Intrauterine infection (extremely rare)

Management of tuberculosis in pregnancy

- ATT should be started early and promptly as diagnosis is made, for untreated diseases presents a hazard to both the mother and fetus.
- The same regimens are recommended for use in pregnancy as for the non-pregnant states except for the with-holding of streptomycin, which is terratogenic.
- Rifampicin is contraindicated in pregnancy, especially first trimester

Medical Treatment
Category 1: this group comprises of;

- Very infectious group
- New patients who are smear positive
- Patients with TB meningitis ,TB spine , miliary TB
- They are put on short course therapy of 2 months intensive supervised treatment
- Then 6 months continuation phase.

Drugs 2EHRZ/6EH

- Ethambutol 800mg OD
- Rifina 450/300 mg OD
- Pyrazinamide 1.5 gm OD
- In TB meningitis, continuation phase is up to 10 months.
- After initial intensive phase, sputum is tested, if it is positive again, intensive phase continues for 1 more month.

Category 2: this group comprises of;

- Relapses
- Patients who were initially smear positive and remained positive after 5 -8 months of treatment (usually due to drug resistance).
- They are put on treatment therapy of 3 months intensive therapy and 5 months continuation phase

Drugs: 2HRZS/1HRZE/5HRE

Category 3

- Children below 12 years
- Pulmonary smear negative but extra pulmonary smear positive
- Pleural effusion

Drugs

- Most anti-TB drugs are now manufactured in fixed-dose combinations (FDCs) instead of only separate tablets.
- Fixed-dose combinations are drugs combined in tablet or capsule form, in specific dosages, to facilitate correct drug intake.

The following FDCs are becoming widely available:

- Isoniazid–Rifampicin–Pyrazinamide–Ethambutol (HRZE), (4FDCs))
- Isoniazid–Rifampicin–Pyrazinamide (HRZ)3
- Isoniazid–Rifampicin (HR)2
- Isoniazid–Ethambutol (HE)2

Currently an intermittent regimen under DOTS strategy is being used worldwide for pregnant women with TB (3 weeks on alternate days) as regards use of pyrazinamide.

Supportive measures during ATT administration include the following;

- Intake of pyridoxine with isoniazid during the entire period of therapy to prevent peripheral neuropathy.
- Prophylactic vitamin K administration to baby at birth to prevent haemorrhagic disease of the new born.
- Segregation of mother from neonate if she has active and infectious disease (especially with MDR-TB) and is not likely to receive ATT due to maternal non-compliance or has received it only for less than two weeks prior to delivery.
- Substitution of either protease inhibitors with another class of ARVs or Rifampicin with Rifabutin In cases of their co-administration.
- Cautiously add other drugs in case of multiple therapies need be given during the co-existence of various diseases.
- Trace and examine the contacts of the pregnant woman's house hold.
- Additional and necessary procedural interventions such as plural, pericardical or ascetic tapping, intercostal chest draining may be done.

Effects of Chemotherapy on Mother and Fetus

Maternal Effects

Isoniazid may cause;

- Cultaneous hypersensitivity
- Hepatitis
- peripheral neuropathy

Rifampicin may cause;

- Nausea
- Vomiting

- Hepatitis

Ethambutol

- Retrobulbar neuritis

Pyrazinamide

- Gastro-intestinal upsets
- Arthralgia
- Hyperuricemia and hepatitis

Streptomycin

- Vertigo
- Ototoxicity
- Nephrotoxicity

However pregnant tuberculous women generally tolerate primary chemotherapy well.

- However pregnancy has been known to result if there was a simultaneous administration of Rifampicin and oral contraceptives and it also accelerates the metabolism of protease inhibitors resulting in sub-therapeutic serum levels.
- Whereas on the other hand protease inhibitors increase the serum levels of Rifampicin and enhances the likelihood of drug toxicity.
- Ototoxicity and nephrotoxicity of streptomycin (aminoglycosides) get enhanced when used in conjunction with other aminoglycosides.
- Congenital deafness has been reported in infants with use of either streptomycin or kanamycin during pregnancy and other birth defects with the use of Ethionamide.
- Use of Isoniazid, Rifampicin, Ethambutol, Pyrazimaide, Streptomycin, and Kanamycin are safe during breast feeding.
- The effects of these drugs get minimized if the mother breast feeds before taking the medication and substitutes the next feed with formula preparations.
- Breastfeeding of neonates is recommended regardless of the mother's TB status (Country policies differ).
- Neonates born to mothers having infectious TB should be given chemo-prophylaxis with INH for 3 months or till the mother becomes non-infectious.
- BCG vaccination may be post-poned.
- After 3 months if mother is sputum smear negative and neonate has negative mantoux test, INH chemo-prophylaxis may be discontinued.
- If mantoux test positive, thorough examination is done to locate presence of pulmonary or extra pulmonary focus and ATT administration may be given accordingly
- Tuberculosis and pregnancy are two different types of stressors experienced by women.
- Their simultaneous presence affects them both physically and mentally.
- Therefore to manage effectively tuberculosis in pregnancy requires great care.

Effects of TB on Pregnancy

TB effects on pregnancy depend upon various factors such as:

- Type, site and extent of the disease
- Stage of pregnancy when treatment gets started
- Nutritional status of the mother
- Presence of concomitant disease
- Immune status and co-existence of HIV infection
- Availability of facilities for early diagnosis and treatment
- The pulmonary and extra pulmonary forms of TB affect pregnant women in the same way as non- pregnant.
- If anti-tuberculosis treatment (ATT) is started early in pregnancy the outcome is the same as that in the non-pregnant clients
- While on the other hand late diagnosis and care is associated with an increased maternal morbidity and pre-term labour.

- Poor nutritional states, hypo-proteinaemia, anaemia, and associated medical conditions contribute to an increased maternal morbidity and mortality.
- Presence of HIV-infection augments the progression of TB and worsens the immune-suppression.
- The two common opportunistic diseases encountered in HIV related lung complications during pregnancy are pneumocystis carinii and mycobacterium tuberculosis.
- The stage of pregnancy at which ATT is begun is of paramount importance because it determines the maternal outcomes in pregnancies associated with TB.

Effects of Pregnancy on TB

It is believed that TB gets worse by the stress of pregnancy especially when associated with a poor nutritional status, immune deficient state or a co-existent disease. Loss of protective antibodies during lactation also favours the development of post-partal TB.

Effects of Maternal TB on Fetus and Neonate

The fetus gets TB infection either by haematogeneous spread through the placenta to fetal liver or by ingestion or aspiration of infected amniotic fluid. However true congenital TB is extremely rare, but chances of the neonate getting TB shortly after birth are greater

A neonate having congenital TB may present with;

- Respiratory distress
- fever
- poor feeding
- Lethargy
- irritability
- Abdominal distension
- Lymphadenopathy and
- Hepato-splenomegaly

Additionally, failure to respond to broad spectrum antibiotics and negative results for other congenital infections increases the suspicion of congenital TB. Nonetheless, late prenatal diagnosis, late initiation of ATT, incomplete and irregular adherence to treatment, advanced lung lesions and poor maternal nutrition due to poverty or ignorance contribute to poor fetal health.

Hypertension in pregnancy

- Hypertensive disorders of pregnancy represent a group of conditions associated with high blood pressure during pregnancy, proteinuria and in some cases convulsions.
- The most serious consequences for the mother and the baby result from pre-eclampsia and eclampsia
- These are associated with vasospasm, pathologic vascular lesions in multiple organ system, increased platelet activation, and subsequent activation of the coagulation system in the microvasculature system (WHO, 2002).

Types of hypertension during pregnancy (WHO 2002)

Gestational hypertension: Hypertension without the development of significant proteinuria (<0.3 g/l), after 20 weeks of gestation or during labour and/or within 48 hours of delivery

Unclassified hypertension in pregnancy: Hypertension found when high blood pressure is recorded for the first time after 20 weeks of gestation or during labour and/or within 48 hours of delivery.

Gestational proteinuria: Development of significant proteinuria (>=0.3 g/l) after 20 weeks of gestation or during labour and/or within 48 hours of delivery

Essential Hypertension

It accounts for 5% of the cases of hypertension in pregnancy. It may be secondary to existing medical problems such renal disease, Cushing's syndrome, Pheochromocytoma, coarctation of the aorta, among others. Diagnosis is made by consistent blood pressure readings of 140/90 mmHg or more on 2 occasions more than 24 hours apart during the first week of pregnancy. The problem is particular in women who present late in their pregnancy without baseline blood pressure measurement.

Essential hypertension may be missed due to greater decreases in blood pressure during pregnancy unless the woman is seen prior to and in early pregnancy. History taking and physical examination is important to rule out the core existing conditions. Perinatal outcome in mild essential hypertension is good but increased in severe cases or super imposed preeclampsia.

Mild essential hypertension is when there is systolic blood pressure of less than 160mmHg and diastolic pressure of less than 110mmHg where as severe essential hypertension is when systolic blood pressure is more than 160mmHg and the diastolic pressure. Antihypertensive drugs may be used to prevent maternal complications though no proven benefit to the fetus or prognosis of pre eclamptic fits. The most commonly used drugs include methyldopa, Nifedipine and oral hydrazine. Sedative drugs may be given to reduce anxiety and help the woman to rest. The nurse can use counseling skills to settle anxiety. Monitor fetal wellbeing.

Renal diseases in pregnancy

Urinary tract infection - This is a clinical condition which affect the urethra, bladder, (lower urinary tract), and the ureters, renal pelvis, calyces and renal parenchyma (upper urinary tract)

Clinical Features of Urinary Tract Infections in Pregnancy

- Itchiness in the urethra due to irritation of the lining of the bladder, urethra, ureters, and kidneys this is due to presence of microorganism in the tract.
- The woman presents with fever due to antigen antibody reactions.
- Bladder irritation, the woman may complain of dysuria, abdominal pains, flank or costovertebral angle and pain in the groin.
- The woman may have difficulty controlling the urine and may leak urine into her /his clothing.
- The urine may smell unusual or look cloudy or red.
- The woman can present with changes in urine output such as polyuria, anuria and oliguria.

Management of a woman with Urinary Tract Infection

Health History

The woman will be asked about the presence or history of diseases that are related to renal or urological problems or if the woman had taken over the counter drugs as well as prescribed medications and herbs. We would also find out any previous hospitalization related to renal diseases and whether the child frequently experienced diarrhoea and crying during mictuation.

Investigations

The following investigations will be done to confirm the diagnosis of Urinary Tract Infection.

Urinalysis

Urinalysis is an array of test performed on urine and is one of the most common methods of urine tract infection diagnosis. A part of urinalysis is performed by using urine dipsticks in which the test results can be read as colour changes. The

specimen should be examined within an hour of collecting the urine. Urinalysis is done for presence of nitrites, leukocytes and leukocyte esterase.

Urine for microscopic examination

Urine for microscopic examination is done to confirm the presence of red blood cells, white blood cells and causative organism

1. **Urine for Culture**

Urine culture is done to confirm suspected urinary tract infection and identify causative organisms.

2. **Retrograde Urethrogram**

This is done to ascertain the presence of congenital Urinary Tract anomalies. Urethrogram involves the retrograde injection of contrast material into the urethra to identify strictures, diverticula or other urethral pathologic conditions in older children.

Treatment

Antibiotics commonly used include:

1. **Amoxicillin**

Dosage; 250mg – 500 mg

Frequency; three times a day for five days or seven days

Side Effects include; Hypersensitivity reactions neurotoxicity with high doses and nausea, diarrhoea.

2. **Nitrofurantoin**

Dosage; 5 - 7 mg/kg/day in 4 divided doses

Route; Oral

Frequency; QID for 5 – 7 days

Side Effects; Nausea, vomiting, fever, rash

3. **Trimethoprim-sulfamethoxazole**

Dosage; 120 – 240 mgs

Route; orally

Frequency; BD for five days

Side effects; allergy, hematopoietic disturbances, hepatitis and Stevens –Johnson syndrome

Follow-up urine cultures may be needed to make sure that bacteria are no longer in the bladder

Nursing management of a woman with urinary tract infection

The nursing model which will be used to aid in the management of Urinary Tract Infection will be Roper, Logan and Tierney model.

Problem Analysis

- Maintenance of a safe environment –Need for Safe environment to promote rest and prevent injury
- Communication - Will not be affected.
- Breathing – Will not be affected
- Eating and Drinking - Need for maintain of nutrition intake because the child's appetite will be affected as a result of anorexia and presence of pain
- Elimination - Frequent or urgent need to urinate and Wetting problems after the child has been toilet trained.
- Personal Cleansing and Dressing - Need for maintenance of personal hygiene for prevention of infections and promote general wellbeing which the patient is assisted due to the age.
- There is need for frequent change of clothes and linen for the child due to incontinence of urine.
- Mobilizing – mobility will be limited due to pain.
- Controlling Body Temperature - Need for Temperature monitoring regularly due to fever which is related to infection as a result of antigen-antibody reaction.
- Work and play – The child will have low tolerance for activity due to pain and itching in the urethra.
- Expressing Sexuality – Will not be affected
- Sleep and Rest - Altered sleeping pattern related to severe pain and strange environment away from the familiar environment (Home)
- Dying- fear of dying.

Problem identified

The following problems were identified;

- Fever
- Impaired urinary Elimination.
- Pain
- Altered sleeping pattern
- Itching of the urethra.

Nursing care plan for a woman with urinary tract infection

Prevention

- Have the mother wear loose-fitting cotton underpants and clothing
- Increase the mother's intake of fluids
- Advise the woman to keep the genital area clean to prevent bacteria from entering through the urethra.
- Teach the woman to be going to the bathroom several times every day
- Teach the woman to wipe the genital area from front to back to reduce the chance of spreading bacteria from the anus to the urethra

The urinary system is composed of the kidneys, ureters, bladder and urethra. All play a role in removing waste from the body. Urinary tract infections typically occur when bacteria enter the urinary tract through the urethra and begin to multiply in the bladder. Although the urinary system is designed to keep out such microscopic invaders, the defences sometimes

fail. When that happens, bacteria may take hold and grow into a full-blown infection in the urinary tract to the condition called Urinary Tract Infection.

Self test

Encircle the most appropriate answer for the following questions. Try not to look at the answers before attempting, so that you assess your comprehension. All the best.

1. IPT of Malaria is first given from what gestational age?
    a. 12 weeks
    b. 18 weeks
    c. 16 weeks
    d. 14 weeks
2. The first line of treatment in Malaria in first trimester of pregnancy is
    a. Quinine
    b. Coartem
    c. Sulphadoxine Pyrimethamine
    d. Artesunate
3. Which of the following statements is **not** true regarding pregnant women with Cardiac conditions?
    a. They should always deliver in the hospital with a functional Obstetric unit
    b. They can deliver at any health facility even in the absence of an Obstetrician
    c. They should never be left unattended to at any point while in labour.
    d. They should have Pre-conception counselling on RH matters.
4. The following are effects of Diabetes Mellitus on the fetus, **except**……
    a. The quantity of glucose transfer to the fetus increases
    b. The fetus' response is prompt by increasing Insulin production
    c. The increase of fetal Insulin results in excessively low Fasting sugar levels in the fetus.
    d. The fetus is not susceptible to congenital abnormalities.
5. The following Anti-Tuberculosis drugs can be given in first trimester of pregnancy, except…..
    a. Ethambutol
    b. Pyrazinamide
    c. Rifampicin
    d. Isoniazid

6. The drug of choice for treatment of Urinary Tract Infections in pregnancy is….

    a. Doxycycline

    b. Nitrofurantoin

    c. Metronidazole

    d. Erythromycin

Answers

Q1: C, Q2: A, Q3: B, Q4: D, Q5: C, Q6: B

2.19 Emergency Obstetric and Neonatal Care (EmONC)

Maternal mortality is not only an injustice; it is also a tragedy to the individual woman, to families, communities and to our nation, Zambia. It is a tragedy because women do not die from diseases but from the normal process of giving life. The high level of maternal mortality in Zambia of 398 deaths per 100,000 births in the year 2014 is a strong evidence of the neglect of the health needs of women. The infant mortality ratio is 45/1000 live births. It is from this background that Zambia has embraced the Emergency Obstetric Care (EmONC) so as to combat this worrying and serious matter of women who continue to die during pregnancy. The main causes of maternal death and disability are complications arising from

- Haemorrhage
- Unsafe abortion
- Eclampsia
- Sepsis and obstructed labour (EmONC training manual, 2011)

Definition of terms

Emergency – sudden crises requiring action, or a sudden event that must be dealt with urgently.
Obstetrics – A branch of medicine that specializes in the caring for women during pregnancy, labour, and immediately following childbirth

Neonate: - A new born baby, especially one less than one month old. (Encarta Dictionaries, 2009).
Care: - To tend or supervise somebody or something.
EmONC is therefore the emergency obstetric care or attention given to both mother and baby to avoid complications and loss of life in pregnancy, labour and delivery.

EmONC BACKGROUND

The world at large is experiencing high rate of maternal mortality.

- The current reported figures are: -
- Global – 260/100,000 live birth (2010, WHO)
- Africa – 590/100,000 live birth (2010, WHO)
- Zambia – 398 /100,000 live birth (2014 DHS)

The high level of maternal mortality in Zambia of 398 deaths per 100,000 births in the year 2014 is a strong evidence of the neglect of the health needs of women.

It is from this background that Zambia has embraced the Emergency Obstetric Care (EmONC) so as to combat this worrying and serious matter of women who continue to die during pregnancy. The concept of EmONC in Zambia

started in 2006 in Lusaka and Ndola, and by 2007 it covered Lusaka, Eastern, Central and Western provinces. The first thing that was done was site assessment where EmONC services were supposed to be introduced (ZDHS 2014).

Principles of EmONC

- To provide knowledge on basic and comprehensive life saving measures to avert maternal and neonatal deaths and disability.
- To influence in a positive way, the attitude of health personnel towards team work.
- To use recommended infection prevention principles for every patient.
- To provide interpersonal communication skills needed to respect the right of women to life, health, privacy and dignity.
- To work hand in hand with the community, non-governmental organizations and other stakeholders in responding effectively to EmONC.

Six United Nations EmONC indicators

Indicator: 1. for every 500,000 population, there should be at least four basic and one comprehensive EmONC facilities.
Indicator: 2. EmONC facilities should be well distributed to serve the 500,000 people.
Indicator: 3. At least 15% of all births in the community take place in EmONC facilities.
Indicator: 4. At least 100% of women with obstetric complications should be treated in EmONC facilities.
Indicator: 5. as a proportion of all births in the population, Caesarean sections should account for not less than 5% or more than 15% of all births.
Indicator: 6. Case fatality rate. The proportion of women with obstetric complications admitted to a facility that die, maximum level should not exceed 1%

EmONC Framework

The EmONC framework is a national framework on ways of handling emergency obstetrics and neonatal wellbeing. This is where we find the help the baby breath (HBB) program which is run by an NGO called 'Tiny People Matters'.

EmONC services model per district

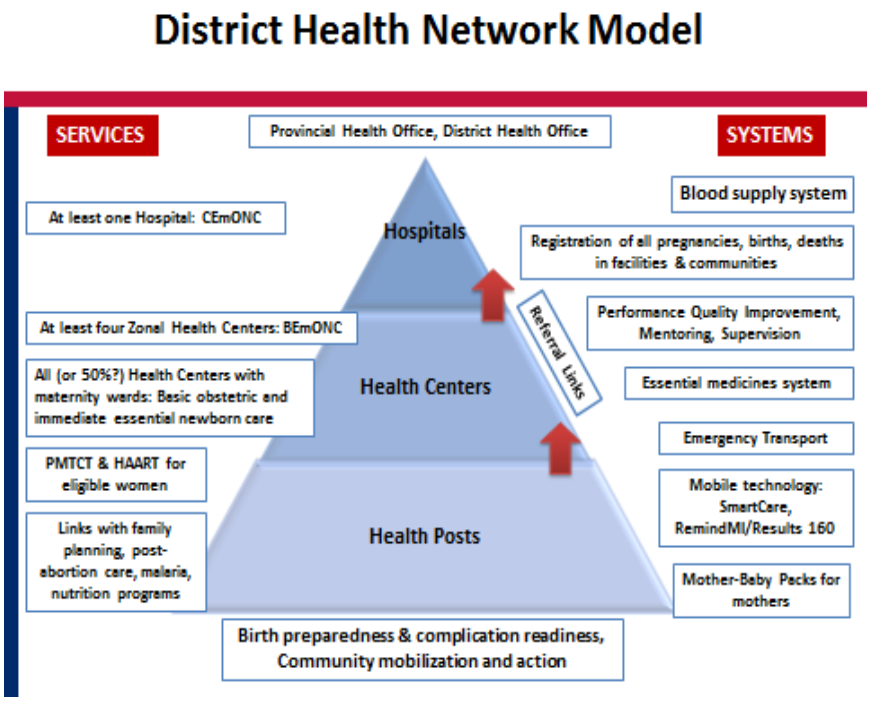


Figure 9: EmONC Service Model per District

Each district is supposed to have both basic and comprehensive EmONC services. Per 500,000 populations there should be 4 basics and 1 comprehensive EmONC services.

Recommendations for basic EmONC service area

Signal functions

- Parenteral antibiotics
- Parenteral oxytocics
- Parenteral anti-convulsants and anti-hypertensive
- Manual removal of the placental (MVA)
- Assisted vaginal delivery (forceps, vacuum extraction)
- Removal of retained products
- Neonatal resuscitation

Settings

- Health centres and hospitals

Skilled Attendants

- Midwives and nurses with midwifery skills
- Supporting staff.

Comprehensive EmONC

Signal Functions

- All 7 basic functions plus:
- Blood transfusion
- Caesarean section

Setting

- Hospitals with an Operating Theatre (OT) and surgical capacity

Skilled Attendants

This comprises a team of doctors, clinical officers, anesthetists, midwives, nurses and supporting staff

Activity

Use your notebook to state the two types of EmONC services. After doing so. Give examples of institutions where each type can be offered.

Excellent! Now review the content above if you did not get it right, and proceed to the management of shock that follows.

Management of shock according to EmONC

General Management

- **Shout for help** to urgently mobilize available personnel
- Greet the woman respectfully and with kindness
- If the woman is conscious and responsive, tell the woman (and her support persons) what is going to be done, listen to her and respond attentively to her questions and concerns.
- Provide continual emotional support and reassurance, as feasible

Immediate Management

- Turn the woman unto her side and ensure that the airway is open.
- If the woman is not breathing, begin resuscitation measures
- Check the woman's vital signs: temperature, pulse, blood pressure and respirations every 15 minutes.
- Give oxygen at 6-8 l/min by face mask or nasal catheter
- Cover the woman with a blanket to ensure warmth but do not overheat.
- In the absence of the Non Pneumatic Anti-Shock Garment, elevate the woman's leg to increase the return of blood to the heart (if possible, raise the foot end of the bed)

- Below is a picture of a shock garment which you wrap the patient with severe shock in.

Figure 10 : Shock Garment

Mechanism of action of the NASG

- The NASG reverses shock by shunting blood from the lower extremities and abdomen to the heart, brain, and lungs.
- It reduces blood loss because it compresses the blood vessels. When the radius of the blood vessels is decreased, blood flow through the vessels decreases.
- Collect blood using antiseptic methods for laboratory investigations such as grouping and cross match, hemoglobin level, clotting time,
- Cannulate two large bore cannula 16G and commence Normal Saline or Ringer's Lactate and adjust tubing to run fluid at a rate sufficiently rapid to infuse 1L in 15-20 minutes.
- For women with uterine atony, start another litter of saline with 20 units of oxytocin, run at a rate of 30-45 drops/minute
- If the woman is not breathing or not breathing well, perform endotracheal intubation and ventilate with an ambu bag.
- Bladder catheterization and an indwelling catheter for proper output monitoring.

Emergency Obstetric Care (EmONC) refers to the care of women and newborns during pregnancy, delivery and the time after delivery. It is offered at two levels of health care; basic EmONC services at a health centres and comprehensive EmONC services at the health institutions where they have theatre facilities. The aim of EmONC is designed to train doctors, nurses and midwives, licentiates, and clinical officers with midwifery skills to provide basic and comprehensive EmONC at the health centre and hospitals to prevent maternal deaths and disabilities.

2.20 Obstetric Complications

The following are the most common perinatal complications.

Pre-Eclampsia

This is a term denoting pregnancy induced hypertension which is progressive unless there is intervention (Olds Et al 2004).

Incidence

Assessing the epidemiology of pre-eclampsia is difficult due to lack of conformity of the definitions described above. There may also be measurement bias and error in the ascertainment of both hypertension and proteinuria. Statistics available indicate that the incidence of eclampsia is estimated at 14% of all maternal deaths and it is assumed that pre eclampsia/eclampsia account for 50% of all hypertensive conditions (WHO, 2002).

Etiology

Generally the placenta is considered to be the primary cause of hypertensive disorders in pregnancy as the condition regresses after delivery. It is indicated that one of the initial events is abnormal placentation. Normally during placentation, between 16 and 20 weeks trophoblasts erodes the myometrium of the spiral arteries, thereby altering musculoelasticity of the tissue, and this will result in dilated blood vessels which are incapable of vaso-constriction creating a low pressure and high blood flow into the placenta with maximum perfusion. However in pre-eclampsia, the trophoblastic invasion of spiral arteries is inhibited resulting in decreased placental perfusion which lead to early placental hypoxia due to low blood flow, high pressure causing spasms and later ischaemia (Fraser & Cooper, 2003).

Other causes include –

- Altered cardiovascular activity
- Increased capillary permeability
- Increased vasospasms
- Micro thrombi
- Hypertension
- Implantation of the placenta because of associated hormones

Risk factors include

- Familial incidence, obesity, renal disease, vascular disorders, gestational diabetes mellitus, chronic hypertension and lupus erythromatous.
- Multiple gestation, hydatidiform mole and fetal hydrops fetalis.
- Extreme ages like teenage prim-gravida and patients older than 35 five years.
- Low social economic status (Morris, 2006).

Classification of pre-eclampsia

It is divided into two grades according to severity;

Mild Pre-eclampsia- Two readings of 90-110 mmhg diastolic BP 4 hours apart after 20 weeks of gestation. Proteinuria up to ++

Severe pre-eclampsia- Diastolic BP of 110 mmhg and above after 20 week gestation and proteinuria of +++ (Olds et al, 2004)

Pathophysiology

Pre-eclampsia has been called a disease of theory because the true mechanism behind the pathogenesis is unknown. Women who develop pre-eclampsia become more sensitive to pressor agents (substances that increase blood pressure) rather than less sensitive to them as in normal pregnancy. This response has been linked to the ratio between prostacyclin, prostaglandins and thromboxane.

Prostacyclin, a vaso dilator produced by endothelial cells, decreases blood pressure, prevents platelet aggregation and promotes uterine blood flow. Thromboxane produced by platelets, causes vessels to constrict and platelets to clump together (NIH, 2000 in Olds, 2004) In Pre-eclampsia, prostacyclin is decreased allowing the potent vaso-constrictor and platelet aggregating effects of thromboxane to dominate.

These hormones are produced partially by the placenta which would help explain the reversal of the condition when the placenta is removed and why the incidence is increased when there is a larger than normal placental mass such as in hydrops, multiple pregnancy or hydatidiform mole. The progression from severe pre-eclampsia to seizures and coma is thought to be due to hypertensive encephalopathy, vasogenic oedema, associated with cortical ischemia or haemorrhage (Morris, 2006).

There is another theory which suggests that women who develop preeclampsia have been found to have an increased cardiac output and an associated endothelial damage. The vaso dilation acts as a compensatory mechanism allowing a normal blood pressure in spite of the high cardiac output. The body responds to the endothelial damage with platelet aggregation and adherence to the damaged sites (Olds et al, 2004).

There is also evidence of endothelial damage in the uterus and placenta with resulting oedema which suggests a similar secondary central nervous system event but a unifying evident theory remains elusive. Cerebral ischemia, infarct, haemorrhage, and oedema have all been known to occur in patients with oedema evidenced by Magnetic Resonance Imaging (MRI) and autopsy (Morris, 2006)

The combined effects of the above events will result in pathological changes consistent with a multisystem disorder as follows;

- **Blood;** High blood pressure combined with endothelial cell damage affect capillary permeability leading to plasma proteins leak from the damaged blood vessels. This will cause decrease in the plasma colloid pressure and an increase in oedema within the intracellular space. It will further cause hypovolemia and hemo concentration due to reduced intravascular plasma volume and this will be reflected in an elevated hematocrit level.

In severe cases, cyanosis occurs due to pulmonary oedema. The coagulation cascade is also activated due to vaso constriction and disruption of the vascular endothelium (Fraser & Cooper, 2003).

When there the coagulation cascade is activated, there will be increased platelet consumption which will lead to thrombocytopenia, and this may be responsible for the development of Disseminated Intravascular Coagulation (DIC).

As the progresses, fibrin and platelets will be deposited which leads to occlusion of blood flow to the many organs especially the kidneys, brain and placenta (Fraser & Cooper, 2003).

- **Kidneys;** Hypertensive disorders in pregnancy can also disrupt renal function. The detectable presence of proteins within the urine (proteinuria) may indicate that larger molecules than normal are being forced into the Bowman's capsule. This is caused by increased blood pressure resulting in abnormal ultra filtration. As the condition worsens, oliguria develops as well signifying kidney damage and severe preeclampsia (Fraser & Cooper, 2003).

    - **Liver;** There will be hypoxia and oedema of the liver cells due to vasoconstriction of the hepatic vascular bed and this may lead to epigastric pain with intra capsular haemorrhages in severe cases. Rarely does rapture of the liver occur, however, there will be altered liver enzyme and albumin levels (Knapen et al, 1999, in Fraser & Cooper, 2003).

    - **Brain;** The combination of hypertension and cerebral vascular endothelial dysfunction leads to increased permeability of the blood-brain barrier. This will result in cerebral oedema and micro haemorrhaging leading characteristics such as headaches, visual disturbances and convulsions. Excessive increase in blood may lead to hypertensive encephalopathy.

    - **Fetal Placental Unit;** There will be vascular lesions in the placental bed due to reduced uterine blood flow and this may result in placental abruption. Blood flow to the chorio decidual spaces will also reduce thereby diminishing

oxygen diffusion into the fetal circulation within the placenta leading to fetal growth restriction. Hormonal output is also impaired due to reduced placental function hence compromising survival of the fetus (Fraser & Cooper, 2003).

Clinical features and diagnosis

- **History taking:** A comprehensive history taking especially at the first antenatal visit will assist to identify some factors which can guide in diagnosis such as; mother's age, social circumstances, family history of hypertension, history of pre-eclampsia, medical conditions like diabetes, prim-paternity among others.

Hypertension: is defined as;

- One measurement of diastolic pressure of 110 mmHg or more
- Two consecutive measurements of diastolic blood pressure of 90mmhg or more after 4 hours or more hours of rest.
- A rise of 15-20 mmHg above the mother's normal diastolic pressure or an increase of 90 mmHg on two occasions elicited at least 6 hours apart when the mother has been at rest.

Take Note
A diastolic increase is significant because it is not affected by excitement.

- **Proteinuria**: In the absence of urinary tract infection is indicative of renal damage and the amount of protein in the urine is taken as the index of the severity of pre-eclampsia. The detection of proteinuria in pregnancy is based on the measurement of urinary protein in either;
    - One 24 hour urine collection with a total protein excretion of 300 mg or more in 24 hours.
    - Two random clean catch or catheter specimen of urine with either ++ or more on reagent strip, + if the specific gravity is 1.030, protein Creatinine index of 300 or more
- **Oedema:** Affects about 85% of women with pre-eclampsia. However oedema of the ankle in late pregnancy is a common occurrence and may be found in 40% of women. This is due to weight of the growing uterus and usually disappears after rest and is not significant in the absence of proteinuria and raised blood pressure. Oedema can be graded as follows;
    - Grade 1 (+) - Ankle oedema
    - Grade 2 (++) – Oedema involving lower limbs of the limbs
    - Grade 3 (+++) – Generalised oedema

Serious secondary features- These are caused by severe vaso-spasms, high levels of blood pressure and rupture of capillaries in various organs in the body. The vaso-spasms, high blood pressure and these haemorrhages into the organs and the subsequent ischaemia produced may give rise to the following;

- **The Brain** (cerebral signs and symptoms)
    - Severe frontal headache
    - Visual disturbance and spots before the eyes with drowsiness
    - Nausea and vomiting

- Ocular Fundal changes may be present
- Twitching, hyper-reflexia which maybe first sign of impending eclampsia

- **The Liver**

Epigastric pain

Nausea

- **The Kidneys**

Severe proteinuria

Generalised oedema

Oliguria

- **The Uterus and Placenta**

Placenta abruptio

Fetal distress

Fetal death

Small Fundal height for gestational age

Management

Investigations

- Urinalysis for proteinuria- Proteinuria greater or equal to 5g in 24 hours
- Full blood count- Haemoglobin, haematocrit, platelets and fibrinogen
- Renal function- Creatinine, urate and uric acid
- Liver function- ALT, AST, GGT, Albumin and Total Protein

The following alterations in the haematological and biochemical parameters are indicative of pre-eclampsia;

- Increased haemoglobin and haematocrit levels
- Thrombocytopenia
- Prolonged clotting times
- Raised serum Creatinine and urea levels
- Raised serum uric acid levels
- Abnormal liver function test particularly raised transaminases

- **Ultra sound scan-** For the Bio-physical profile of the fetus and fetal movements, breathing and liquor volume
- **Fetal maturity Test-** Pulmonary surfactant (Lecithin sphingomyelin ratio, normal 2:1).

Medication

Anti-hypertensives

These maybe ordered when the blood pressure exceeds 150/100 mmhg in an effort to reduce maternal hypertension, prevent CVA and eclampsia, and therefore prolong pregnancy and fetal and maternal survival rates.

- **Methyldopa**

250-500 mg TDS

It is a long term treatment until the fetus is more mature (35-36 weeks)

This medication takes 24 hours to be effective

- **Nifedipine (adalat/ retard)**

10 to 20 mg as prescribed

Sublingually used for acute lowering of blood pressure

- **Hydrallazine (Apresoline)**

5mg to 20mg

Given when diastolic pressure is above 110mmHg

Given intravenously slowly

- **Steroids-** When pre-eclampsia develops late in gestation, steroids maybe given to reduce the risk of RDS for example Dexamethasone 4mg, 12hourly for 48hours.
- **Aspirin-** It is thought to inhibit production of platelet aggregating agent thromboxane A2, therefore low dose of aspirin maybe beneficial for women at high risk of pre-eclampsia. It also prevents pre-term deliveries

When lowering blood pressure with medication it is vitally important to monitor the fetal heart in order to detect whether the lowered maternal BP is affecting the utero-placental blood flow and fetal oxygenation. The mother must be on continuous CTG

- **Sedatives/ Tranquilizers and Anti-convulsants**

In eminent eclampsia and eclampsia, it is important to reduce excitation threshold of the CNS.

- **Phenobarbitone 30-60 mg**

May be used in small doses for mild pre-eclampsia when the patient is not likely to into labour

It has a depressing effect on the maternal and fetal respirations

- **Magnesium Sulphate 4-5grams**
    - It is successful in controlling seizure in 95% cases
    - It is given intravenously slowly
    - It inhibits the release of acetycholine at the motor end plate
    - Always monitor for loss of reflexes and decreased urine output

- **Diazepam 5-10 mg**
    - It is given intravenously slowly
    - Used for transporting patients with eminent eclampsia or eclampsia

Antenatal Care

If the midwife diagnoses hypertension or pre-eclampsia during pregnancy, she should refer the woman to the doctor or maternity for assessment and if pre-eclampsia is confirmed the woman is admitted. Care and management will vary depending on the degree of pre-eclampsia

Aims of Care

- To Monitor the disease and prevent it from worsening
- To provide enough rest and a tranquil environment
- To prolong the pregnancy until the baby is sufficiently mature to survive extra- uterine life while safe guarding the mother's life.
- To provide psychological care to the woman and the family/support person

Rest

- The woman is advised to rest as much as possible to minimize stimulation of the CNS and this should be facilitated by the midwife and details of the importance of rest explained in details to the patient.
- The woman should at rest at least 12 hours at night and 3 hours during the day, this will as well promote improved blood flow to the heart and therefore to the placenta.
- The doctor may order a mild sedative to ensure rest and sleep

Diet

- Should be high protein, high vitamin and high fibre.
- There is some evidence that fish oil may prevent hypertension and proteinuria preeclampsia as it acts as an anti-platelet agent.
- Vitamin c and E supplements are effective in decreasing oxidative stress and improving vascular endothelial function.

Weight Gain

- Is useful for monitoring the progression of preeclampsia in conjunction with other parameters
- A woman should not gain more than 12kg above their normal weight in pregnancy.

Observations

- Blood pressure is monitored daily if patient is at home and four hourly when admitted.
- Urinalysis should be done daily to monitor the level of proteins as increase may indicate progression of the disease.
- Abdominal examination is carried out daily and any tenderness or discomfort should be noted and reported immediately to the doctor as it may be a sign of placenta abruptio.
- The midwife should observe and advise the patient to report experience of any of the following signs and symptoms:
- Severe frontal headache
- Epigastric pain
- Visual disturbance
- Diminished urine output
- Vomiting
- Drowsiness
- Fetal assessment should be done to determine fetal health and fetal wellbeing and this can be achieved by using a kick chart, CTG monitoring, ultra sound scan to check for fetal growth.
- Check the fetal heart four hourly.

Psychological Care

- Maternal and fetal condition together with the plan of care should be discussed with the woman and her support person and family particularly the prognosis for the pregnancy and potential for perinatal loss.
- Establish a good midwife /patient relationship
- Allow significant others to visit her but restrict others

Intrapartum Care

- Never leave the patient alone as the condition can worsen any time.
- Inform the doctor immediately there is change in patient's condition.
- Insert catheter and monitor urine output hourly. Normal is 30 mls per hour.
- Do urinalysis four hourly and note the levels of proteins, ketones and glucose.
- Monitor Blood pressure ½ hourly or ¼ hourly and fetal heart ¼ hourly.
- Continue with prescribed medication and keep record of all drugs given during labour and delivery.
- Shorten second stage of labour.
- Prepare for episiotomy forceps or vacuum delivery.

- Relieve pain using epidural analgesia

Post Partum Care

- Continue monitoring maternal condition four hourly for 24 hours as there is potential danger of the mother developing eclampsia.
- Monitor fluid balance until normal and urinalysis until proteins are negative.
- Discharge patient ONLY when blood pressure is normal and protein free urine.

Effects on;

The Mother

- Hematological disturbance which can lead to serious damage to vital organs.
- Capillaries of the eyes may be damaged and blindness can occur.

The Fetus

- Reduced placental function resulting in low birth weight.
- Increased incidence of hypoxia which can lead fetal distress and fetal death.
- Placenta abruption can cause intra uterine death and hypoxia.
- Prematurity

Complications

Maternal

- Eclampsia
- Placental abruptio
- Sub-capsular hepatic haemorrhage
- Cerebral vascular accident
- HELLP syndrome
- Acute renal failure

Fetal

- Intra uterine growth retardation
- Prematurity
- Asphyxia Neonatorum

- Intra-uterine death
- Raised peri natal mortality
- Brain damage which can lead to handicap and mental retardation

Scenario

1. Mrs Jones aged 24 years Para 1 and Gravida 2 presents to you on 16th January, 2015 with a Foetal kick chart record showing:
   - 13/01/2015 ranging between 4 and 5 per hour
   - 14/01/2015 ranging between 2 and 3 per hour
   - 15/01/2015 ranging between 1 and 2 per hour

   On examination the blood pressure is 150/100mmHg, tibial oedema, proteinuria + and HOF 32 weeks. Other information is that Mrs Jones smokes a few cigarettes per day.

   a). What is your diagnosis?

   b). Draw up a nursing care plan for Mrs Jones.

   c). Discuss aetiology of the condition and outline possible complications.

Eclampsia

This is an acute condition characterized by convulsions and coma and is a complication of pre-eclampsia or conditions where pre-eclampsia is super-imposed upon already existing chronic hypertension or chronic renal disease (Morris, 2006).

Management

Objectives of Care

- Bring the woman to medical care
- Clear and maintain the air way.
- Administer oxygen and prevent hypoxia.
- Prevent the mother from being injured.
- Preserve the life of the mother.

Management at the clinic

- Contact the hospital and make arrangement to transfer the patient.
- Do not leave the patient alone.
- Carry out first-aid treatment

- Insert an airway if the patient is fitting or unconscious.
- If available, give oxygen.
- Do not restrain the patient during a convulsion
- Give initial dose of diazepam 20 mg stat
- Secure an intravenous access for resuscitation
- Transfer the patient to the hospital and continue with oxygen throughout and keep the patient sedated.

Management at the Hospital

- Nurse the patient in an obstetrical intensive care unit with a midwife in constant attendant and if possible a doctor.
- Keep the relatives/support person well informed about the patient's condition.
- Obtain consent for operation.
- Commence 5% dextrose.
- Check the vital signs ¼ hourly and do urinalysis every 2 hours
- Withhold oral fluids.
- Insert urinary catheter and monitor urinary output.
- Nurse patient in a railed bed to prevent injury.
- The room should be quiet and dim-lit to avoid stimulation.
- Administer oxygen continuously and suction PRN.
- Monitor fetal heart and contractions by CTG. Fetal bradycardia is common following the eclamptic seizure and has been reported to last from 30 seconds to 9 minutes. The interval from the onset of the seizure to the fall in the fetal heart rate is typically 5 minutes or less. Transitory fetal tachycardia may occur following the bradycardia.
    - After the initial bradycardia, during the recovery phase, the fetal heart rate tracing may reveal a loss of short- and long-term variability and the presence of late decelerations. These abnormalities are most likely due to the decrease in uterine blood flow caused by the intense vasospasm and uterine hyperactivity during the convulsion.
    - If the fetal heart tracing does not improve following a seizure, further evaluation should be undertaken. Growth restricted and preterm foetuses may take longer to recover following a seizure. Placental abruption may be present if uterine hyperactivity remains and fetal bradycardia persists.
    - Growth restricted and preterm foetuses may take longer to recover following a seizure. Placental abruption may be present if uterine hyperactivity remains and fetal bradycardia persists
    - Monitor convulsions and record for time, frequency, duration and type.
    - Obtain specimen for grouping and cross-matching.
    - Use a Glasgow coma scale to monitor patient's consciousness in severe eclampsia.

Medication

Diazepam

- Give a loading dose of Diazepam 10 mg IV slowly over 2 minutes and repeat 10 mg if convulsions occur.
- Give maintenance dose 40 mg in 500 mls IV fluids (Normal Saline/Ringers) to keep the woman sedated be rousable.
- Stop maintenance dose if breathing is less than 16 breaths per minute and do not give more than 100 mg in 24 hours.
- If IV access is not possible for example during convulsions, give a loading dose of diazepam rectally 20 mg in a 10 ml syringe and maintenance dose 10 mg.

Magnesium Sulphate

Loading dose

- 4g of 20 % MgSO4 IV over 5 min
- Then give 10g of 50 % Mg SO4 solution, 5g in each buttock as deep IM injection with 1 ml of 2% Lignocaine in the same syringe.
- Warn her that she will have a feeling of warmth on the in the buttock injected.
- If convulsions recur after 15 min, give 2g top up dose of 50% MgSO4 solution IV over 5 min.

Maintenance Dose

- 5 g of 50% MgSO4 with 1 ml of 2% Lignocaine in same syringe deep IM in alternate buttocks every 4 hrs. Continue treatment for 24 hrs after delivery or after the last convulsion.
- If 50% solution is not available, give 1g of 20% MgSO4 solution IV every hour by continuous infusion.

Dilution for 50% MgSO4 solution

MgSO4 10 ml = 5g

- Add 15 ml of water for injection to 5g (10ml) of MgSO4 50% to make 25 ml (20%)

Therefore:

- 4g of 20% solution = 20ml

Before repeating dose ensures that:

- Respiratory rate is at least 16 per min.
- Patella reflexes are present
- Urinary output is at least 30 ml per hour
- Withhold or delay drug if the above parameters are otherwise.

Antidot in case of respiratory arrest

- **Calcium gluconate 1g (10 ml of 10% solution) IV slowly.**

Control hypertension: Blood pressure should be assessed with the goal of maintaining diastolic blood pressure less than 110 mm Hg with administration of antihypertensive medications as needed (for example hydralazine, nifedipine).

- Regularly check of neurologic status for signs of increased intracranial pressure or bleeding (for example fundoscopic examination, cranial nerves).
- Invasive monitoring: Pulmonary arterial pressure monitoring is rarely indicated but may be helpful in patients who have evidence of pulmonary oedema or oliguria/anuria.
- If the fetus is alive prepare for caesarean section and if the baby is not viable is usually induced.

Activity

Differentiate between Pre-eclampsia and Eclampsia in your notebook.

Good attempt, keep working hard. Remember there I a thin line between Pre-eclampsia and Eclampsia. Now take a few minutes break and proceed with the following content on IUFD.

Intra-Uterine Fetal Death (IUFD)

Intra-uterine fetal death is death of the fetus before birth and is called an abortion if death occurs before 26weeks of gestation or still birth if the death occurs after 26weeks of gestation (Sellers, 1993).

Predisposing factors to IUFD

During Pregnancy

- All maternal conditions which predispose to intra -uterine fetal growth retardation can lead to IUFD.
- Chronic conditions like Diabetes, chronic Nephritis and Anemia,
- Pregnancy Induced Hypertension (PIH), there is fetal anoxia produced due to reduction in maternal blood supply to the placenta as a result of spasms or thrombosis of maternal vessels
- Infections such as STDs, malaria Rubella, cholera can lead to IUFD.
- Amniotic fluid infection syndrome.
- Accidents or trauma during pregnancy;
- Ante-partum haemorrhage from placental detachment due to trauma or to a short cord, Uterine rupture
- The cord tightly around the neck or body of the baby.
- Oligohyramnios
- Rhesus incompatibility (iso-immunization).

Predisposing factors of IUFD during labour

1. Prolonged labour.
2. Malpresentation which gives rise to cord prolapsed.
3. Anaesthetic drugs may depress fetal respiration.
4. Use of oxytocic drugs may lead to excessive uterine contraction.
5. Precipitate labour.
6. Maternal Death

Activity
Use you notebook to list 6 pre-disposing factors to IUFD. After you do so, proceed to mentioning the Complications following IUFD and how they can be prevented.

Now proceed to the following content on clinical features.

Clinical features in an IUFD pregnancy

- No fetal movement felt by the mother for more than 3 days.
- The size of the uterus is less than the gestation age.
- Uterine size fails to increase from previous visits.
- There will be improvement in maternal condition if she is suffering from certain complications such as; pre-eclampsia, Gestational diabetes, Cardiac and Respiratory diseases.
- No fetal heart sounds can be heard using Pinnard's stethoscope.
- Signs of pregnancy will be suppressed, breasts feels less heavy, no further nausea.
- There decreased in maternal weight.
- On V/E the soft collapsed skull can be felt.
- The fetus sinks in the lower uterine pole often in a transverse lie.

Investigations done in suspected IUFD

Utralsonic examination

- Fetal heart movement not seen and fetal breathing absent.
- Fetal body and limbs movement not seen.
- The bi-parietal Cephalometry after 30weeks shows no increase in growth at weekly Intervals.
- There is loss of fetal structure with a collapsed thorax and mis-shapen skull.
- There is an abnormal reduction in liquor.
- There is multiple intra-cranial echoes appearing, a double skull.
- There is a double skeleton outline on ultrasound

Hormonal Assays (Placental Function)

- Maternal urinary or blood oestriol and human placental lactogen (HPL) levels will be very low for the time of gestation.(rarely used)

Radiological Examination

The following will be seen on x-ray;

Ball's sign-This is loss of muscle tone, the fetus will appear rolled up with hyperextension of the head.

Spalding's sign –seen on an x-ray, there is over lapping and angulations of cranial bones, this is due to shrinkage of the brain

Roberts' sign –This is present of intra abdominal or intravascular gases .This is usually seen 12hrs after IUFD, also indicates fetal maceration.

Halos' sign –where an image is seen around the skull of the dead fetus due to infiltration of fluid beneath the scalp.

Management of IUFD

1. Midwifery Management

- The patient must be referred to the Doctor once IUFD is suspected.
- Provide psychological care to the client and the support person once patient has been confirmed, it is traumatic to the patient

2**. Obstetrical management**

- The doctor will confirm whether it is an intra-uterine or extra –uterine pregnancy.
- The cause is determined.
- The doctor decides on time and mode of delivery. Delivery should be within 2-3wks, there is no urgency for the fetus to be expelled immediately, and the woman usually goes in labour spontaneously.
- If the woman does not go in labour within 3weeks after fetal death, the doctor will terminate because of the dangers of severe DIC.
- Blood for fibrinogen levels is taken .If the levels are less 1g/L, it is abnormal and fresh compatible blood is given before termination.
- Labour will be induced by use of prostaglandins to ripen the cervix.
- If prostaglandins fail, IV oxytocin infusion is commenced, the midwife monitors to prevent dangers of rupture of the uterus.
- Membranes are not ruptured until labour is well established to avoid risk of infections.
- Antibiotics are given if membranes ruptured 6hrs -12hrs ago to prevent risk of infection.

General management after delivery

- After delivery, the baby is removed examined and weighed, as the placenta and Membranes.
- If baby is viable treat as still birth and relatives may arrange for burial.
- If baby not viable, the relatives will be asked if they wish to bury or incinerated.
- The relatives may be asked if they wish to view the body before disposal.
- Histological examination of the fetus and placenta to determine the cause may be taken to the laboratory for investigations.
- The patient and the support person should not be ignored, continue psychological care.
- If possible patient to be nursed in a separate room allow relatives to visit. Respect their customs and traditions.
- If there are no complications within 24hrs -48hrs the mother is discharged.
- The mother is counselled on suppression of lactation.
- Allow the mother to come for postnatal review at 6days and advice on family planning.

Prevention of IUFD

- Good antenatal screening to rule out conditions that predisposes to IUFD. Diabetes should be controlled and proper treatment of infections such as STDs and prophylaxis treatment of malaria for example fansidar.
- Good management during labour and during induction of labour.

- Genetic counseling especially those with Rhesus incompatibility.
- Family planning –This will help the patient to recover or be treated for the condition which may have led to IUFD.

Complications of IUFD

- Disseminated intravascular coagulation (DIC) this occurs when the fetus is retained for more than 4weeks. Thromboplastin is released in maternal blood stream, clotting system is altered .There is multiple blood clots leading to depletion of factor v and vii hence leading to excessive DIC.
- PPH –due to retained products leading to failure of the uterus to contract adequately
- Infections especially in macerated fetus.
- Air embolism

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Case study

Read the following story about Mrs Mulenga and Answer the questions that follow:

Mrs Mulenga, P1 G4 comes to your Health centre with complaints of not feeling fetal movements for the past two days. She has a history of two previous spontaneous abortions and one Fresh Still Birth within the last 5 years. She is a known Diabetic patient, and she also has history of Hypertension in her family. Mrs Mulenga was booked for ANC during her 7th month of pregnancy, and this one is her second visit at 9 months. On History and Physical Examination you discover that Mrs. Mulenga smokes at least 4 cigarettes per day and there are no Fetal Heart Sounds respectively. IUFD is suspected.

After Ultrasound examination, it is discovered that the Ball's sign, Spalding's sign, Robert's sign and Halo sign are present. In addition Fetal Heart Beat is not detected by Ultrasound. A conclusive diagnosis of Intauterine Fetal Death (IUFD) was made.

Mrs Mulenga and her husband were very devastated at the news of the death of the fetus, because they were anticipating the birth of this baby, which should have been their second child. The couple regretted having booked late for ANC, where IEC could have been provided on various predisposing factors to IUFD, and where appropriate interventions could have been done to prevent the current situation.

Questions

1. Mention factors that predisposed Mrs Mulenga to having IUFD.
2. Mention how these factors could have been prevented.

Antepartum Haemorrhage

Ante partum haemorrhage is bleeding from the genital tract after the 26weeks of gestation up to the delivery of the infant (Sellers, 2010) OR

Ante partum haemorrhage is bleeding from genital tract in late pregnancy after 24th week of gestation and before onset of labour (Fraser & Cooper, 2003).

Classifications of APH

Placental causes

- .Placental abruptio
- .Placental praevia
- .Miscellaneous causes, vasa praevia, placenta membranacea and circumvallata

Non placental causes

- Local lesions, varicosities, cervicitis, polyps and ca cervix
- Decidual bleeding

Unclassified causes

.Includes all causes not classified under the above.

Management of APH

Together with the standard care of a pregnant woman and a woman in labour the following specific care is given;

- Send urgently for medical assistance and do the following while waiting for the obstetrician to review,

Admit the patient on complete bed rest.

First priority is the maternal wellbeing. The nurse should look for any signs of pallor or breathlessness which may indicate shock

- If a woman comes unconscious IV line normal saline to be commenced or ringers lactate.
- If conscious, reassure together with the support person and encourage the patient constantly to alleviate neurogenic shock.
- Get history from client or support person about onset of bleeding.
- Ask if onset of bleeding is associated with anything, ask if blood is visible, colour of blood, as bright red is associated with placental praevia while dark red with placental abruptio.
- Inspect the pads or clothes used in order to determine amount of blood lost and to ensure adequate fluids replacement.
- Collect blood for Hb, x-match and grouping and also for clotting time.
- Vital signs to be done ¼ hrly to ½ hrly to rule out shock.
- Catheter inserted into bladder for strict input and output.

.Abdominal Palpation

Check for signs of labour

Check for uterine tenderness

Check for highness of the presenting part or non engagement of the presenting part

Ask mother if feeling fetal movements

Measure abdominal girth because in abruptio the girth increases especially if the bleeding is concealed

Check for malpresentation which is mainly in placenta praevia

Fetal heart sound recorded ¼ hrly or can be put on cardiotocogram for recording fetal heart sounds.

Take Note

Do not do a V/E or give enema as this may precipitate APH.

Management of APH at the clinic

If the patient has been admitted at the clinic, the above management plus the following is done:-

- The hospital is informed of all the facts of the case.
- Transport is arranged to get the patient to the hospital.
- Stabilize the patient then refer once stable.
- Reassure patients' relatives and keep informing them about the situation.
- Cannulation and consent could have been done.

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Take note:

The cause of APH should be determined as early as possible in order to be able to give specific management.

It is important to determine whether bleeding is due to Abruptio Placenta, Placenta Preavia or other causes of APH.

Abruptio Placentae (Accidental Haemorrhage)

Abruptio placentae are the premature separation of a normally situated placenta from its uterine attachment occurring after 28th week of pregnancy (Frazer et al 2006).

Types of bleeding in placental abruptio
Revealed:-External bleeding
.This is where the blood tracks down between the membranes and the wall of the uterus escaping through the cervix.

Concealed Bleeding
Blood from the placental site remains behind the placenta and membranes. It does not escape per vagina.

Combined or mixed bleeding
Some of the haemorrhage is retained behind the placental site while some escapes per vagina to be revealed.

Classification of placenta abruptio

Mild
In this type usually less than 500mls of blood is lost as a result of a slight placental separation and haemorrhage.
The maternal and fetal conditions are unchanged (no distress) and there is no uterine tenderness.

Moderate
A quarter of the placenta has been separated and there is about 1000ml of blood lost.
Patient is shocked with tachycardia and hypotension, abdominal pain, uterine tenderness.
The foetus is hypoxic and compromised.

Severe

- In severe 2/3 of the placenta has separated from the uterine wall with about 2000mls of blood lost and the blood is retained as a retro-placental clot.
- The mother is shocked, oliguric and hyportensive.
- The Uterus is tense and tenders (its woody)
- The foetus may be dead.
- The patient is at risk of developing DIC
- The site of separation could be central or at the side.

Predisposing factors to placental abruptio
In many cases, the cause is known, but the following may contribute;.
Low social-economic status and high parity are frequently associated with an abruptio placenta.
Age- Abruptio placenta appears more common in women over 35 years and under 20 years.
Hypertension-Particularly hypertesional protenuria
Smoking - Abruptio placenta appears more common in women who smoke and is due to decidual necrosis associated with smoking.
Trauma-This cause is rare, but whether from a blow or RTA will cause bleeding.
External Version-Will cause premature separation of the placenta. Version either done late pregnancy or roughly done or where there is a short cold may bring about abruptio.

Polyhydramnios-The sudden reduction of a grossly distended uterus could cause detachment of the placenta bed.

Clinical features of a placental abruptio
These will depend on the degree of separation and the site of implantation.

Bleeding
In revealed the blood is dark red with clots.
If the bleeding is both revealed and concealed, the amount of pain and shock is far much greater than could be expected for the amount of blood lost.
If the bleeding is concealed the amount of pain and shock is intense and as no haemorrhage is visible the cause is obscure until the abdomen is palpated.

Pain
With sudden attack pain can be acute and intensive at first changing later to a dull ache or a sheering type of pain. If the placenta is posterior, backache will be experienced.

Foetal
- Fetal movements will be lacking and the condition is severe, fetal distress or fetal death will occur.
- As the bleeding increases abdominal girth enlarges and the uterus becomes tense, hard, woody and board like and extremely tender to touch. This condition is known as a couvelaire uterus
- The uterine outline becomes globular and palpation of the uterine contents is impossible.
- No fetal heart sound is heard and no fetal parts can be palpated.
- The vital signs vary according to the severity of the condition for example could be low BP, thread pulse tachycardia and nausea in severe cases while in mild placenta abruptio can be symptomless and if not diagnosed can lead to serious life threatening

Management of placental abruption according to severity mild abruptio placetae
In this case mother and fetus are stable. There is no indication of maternal shock.
Vital signs are done 4hourly.
Reassure patient
Refer to obstetrician without doing V/E
Ultra sound will be done to determine the location and identify any degree of concealed bleeding
If possible obstetrician may do speculum examination to rule out lesions.
If admitted, give a kick chart woman to monitor fetal movement every 12hours.
Fetal condition should be continuously be assessed if bleeding persists.
If woman is not in labour and gestation is less than 37 weeks and condition of both stable, she may be discharged
If gestation is above 37 weeks, an induction may be offered.
In further bleeding or evidence of fetal distress cesearean section is necessary.

In Moderate Abruptio Placentae
The mother will be shocked, with raised pulse rate and hypotension.
Immediately reduce shock and replace blood loss.
Raise foot end of the bed or legs to reduce shock.
IV fluids ringers lactate or normal saline as prescribed are given.
Psychological care
Keep Nil orally patient may require operation.
Collect blood for X-match, grouping and Hb.
Blood transfusion if Hb levels low.
Insert catheter, test urine to rule out PIH.
Maintain intake and output chart to rule out renal failure. Fetal heart sounds monitor ¼ hrly
Measure abdominal girth
Consent to be obtained
Depending on condition caesarean section will be done for immediate delivery

In severe abruptio
It is an acute obstetric emergency.
Correct the shock
Give blood transfusion
Deliver the baby as soon as possible. Do vital signs ¼ hrly of TPR and BP.
Observe fetal heart sounds ¼ hrly
Give Analgesia irrespective of fetal condition that is pethidine 100 mg stat.
Do investigation as in moderate.

The third stage
This is managed actively by administration of intramuscular syntometrin if mother not hypertensive.

Up to 40 units of oxytocin can be added to the IV Ringer solution to ensure control of any possible further haemorrhage.

Post delivery activities

Post deliveries together with the standard nursing care of a patient in the immediate post delivery period, the following specific care is done:-

Observe patient in labour ward for 48-72 hours until condition is stable.

Observe uterus if well contracted.

Maintain strict intake and output record to rule out renal failure.

Continue with vital signs until condition stabilizes.

Complications of placental abruptio

The following will be the complications for Abruptio placentae

- .Acute Renal Failure due to hypovolamia.
- .Recurrent Abruptio placenta in sub- sequence pregnancy.
- .Anaemia due to severe bleeding.
- .Sheehan 'syndrome-due to necrosis of anterior pituitary gland.
- .PPH due to a convelaire uterus
- .Sepsis due to reduced Hb hence prone to infections.

Placenta Praevia

Placenta previa is a condition that occurs during pregnancy when the placenta is abnormally placed, and partially or totally covers the cervix (Sellers, 1993)

Types/grades of placenta previa

Grade	Vs Description
I	Placenta is in lower segment, but the lower edge does not reach internal os
II	Lower edge of placenta reaches internal os, but does not cover it
III	Placenta covers internal os partially
IV	Placenta covers internal os completely

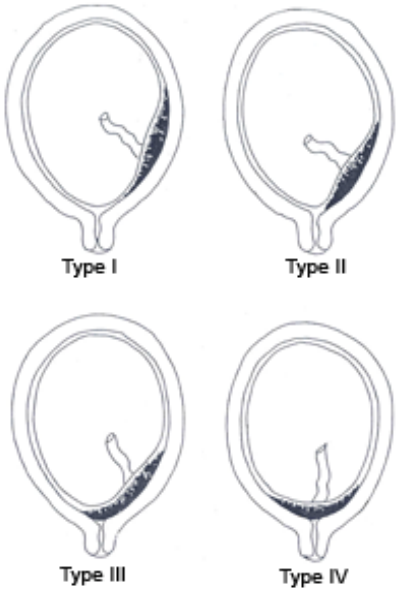

Figure 11: Types of Placenta Praevia

Signs and symptoms of placenta previa

Women with placenta previa often present with painless, bright red vaginal bleeding. This commonly occurs around 32 weeks of gestation, but can be as early as late mid-trimester. This bleeding often starts mildly and may increase as the area of placental separation increases. Praevia should be suspected if there is bleeding after 24 weeks of gestation.

- Women may also present as a case of failure of engagement of fetal head.
- The presentation is high and mobile because the placenta occupies the lower segment and prevents engagement.
- On abdominal palpation there is no tenderness or hardness of the uterus.
- Fetal heart sound is usually present if the bleeding is minimal.
- Signs and symptoms are usually present.

Predisposing factors of placenta previa

The following have been identified as risk factors for placenta praevia:

- Previous placenta previa (recurrence rate 4-8%), caesarean delivery myomectomy or endometrium damage caused by D&C.
- Alcohol use during pregnancy
- Women who have had previous pregnancies, especially a large number of closely spaced pregnancies, are at higher risk due to uterine damage.
- Smoking during pregnancy, cocaine use during pregnancy
- Women who are younger than 20 are at higher risk and women older than 35 are at increasing risk as they get older.
- Women with a large placenta from twins or erythroblastosis are at higher risk.
- Race is a controversial risk factor, with some studies finding that people from Asia and Africa are at higher risk and others finding no difference.
- Placental pathology (Vellamentous insertion, succinturiate lobes, bipartite that is, bilobed placenta among others.)

Placenta previa is itself a risk factor of placenta accreta

Management of Placenta Previa

This is an emergency. Patient is admitted and the medical officer is informed.
AIMS:

- Controlling of bleeding (Active management)
- Maintenance of pregnancy (Conservative management)

A. Active Management
It involves treatment of shock and restoring blood depending on the amount of blood loss.
Prepare the patient for operation if bleeding is profuse or if there is fetal distress and other complications like transverse or oblique lie.

- If the bleeding is slight and the pregnancy is 37 weeks
  -A vaginal examination is done under general anaesthesia.
  -During vaginal examination if placenta previa type II posterior, type III or type IV is found then caesarean section is done.
  If it's found that it is type I, labour is induced for SD.
  However the favourable mode of delivery remains caesarean section.
  -If the bleeding is slight and pregnancy is less than 37 weeks the woman is kept in hospital until the fetus is mature for delivery. Such a patient is conservatively managed.

B .Conservative Management

Patient is kept in hospital and confines to bed.

Observations on maternal and fetal well-being are done.
Supportive care on bed baths, oral toilet, bed pans and feeding.

Investigations

-Routine blood test are done
-Ultra sound done to localise the placenta.
-X-ray done to localise the placenta
.If bleeding stops the patient can be discharged from the hospital
-After delivery of the baby observe the mother for postpartum haemorrhage because the lower segment of the uterus does not contract and retract to control haemorrhage.

Complications of placenta previa

Maternal

- Antepartum haemorrhage
- Malpresentation
- Abnormal placentation
- Postpartum haemorrhage
- Placenta praevia increases the risk of puerperal sepsis and postpartum haemorrhage because the lower segment to which the placenta was attached contracts less well post-delivery.

Fetal

- IUGR (15% incidence)
- Premature delivery
- Death

Activity
Using a table with two columns differentiate between Placenta Praevia and Abruptio Placenta parameter by parameter. This will help you to understand and manage each condition specifically.

Very good, fill in the gaps using the notes on the two conditions before proceeding to the next topic.

Scenario
Read the following scenario and attempt the questions that follow:
Mrs Milimo aged 45 years; a peasant farmer with humble education background comes to your Health Centre with history of spotting per vaginum for the past three days. Mrs Milimo is P6, G7 and her husband beats her from time to time, her gestational age is 24 weeks. She had not booked for ANC. She has history of convulsions in the previous pregnancy and she usually has home deliveries.
Upon examination her BP is 140/100mmHg and the abdomen feels soft on palpation.

Questions

1. What would be the provisional diagnosis for Mrs Milimo and why do you think so?
2. What could be the predisposing factors to your provisional diagnosis?
3. How would you manage Mrs Milimo at your clinic?
4. What specific IEC would you give Mrs Milimo concerning her condition?

Postpartum Haemorrhage (PPH)

More than half of all maternal deaths occur within 24 hours of childbirth, mostly due to severe bleeding. PPH accounts for about 25% of maternal deaths worldwide. Rapid action is critical for survival.

Causes of PPH

The following are the causes of PPH

- Atonic uterus

- Retained placenta or fragments
- Tears of uterus, cervix, vagina, perineum
- Coagulation defects
- Inversion of uterus
- Infection (delayed PPH)

Pre disposing factors to PPH

- Maternal age 35 or over
- Delivery after APH
- Multiple pregnancy
- Polyhydramnios
- Past history of PPH

Take Note
Do not ignore any complaints by the Client about dizziness, excessive bleeding, heart palpitation, and feeling of weakness and shortness of breath. These could be indications for shock as a result of excessive bleeding.

Management of PPH

This is a life threatening complication which must be managed promptly and effectively.
Get all the help you can.
Prevention is the best management.
General Management Steps

- Have protocol in the labour ward
- Call for help, Perform Rapid Evaluation (Vital Signs& cause BP, pulse, RR, Pallor), Massage the Uterus
- If shock is present start Immediate Resuscitation
- Start IV Infusion 1 litre/15 min
- Give Oxytocin 10 Units IM ff 20u in 1litter NS
- Take Blood for G& XM – 20ml blood for XM and coagulation studies
- Give Oxygen
- Elevate foot end
- Catheterize to monitor urine output (<30ml/hr), Check Placenta for completeness, Examine Birth canal for tears (EUA), Monitor closely for further bleeding, When client stabilized Check HB, Treat anaemia.

IV **Fluid Replacement: in Shock**

Start resuscitation with cystalloid fluids such as normal saline or ringers lactate
Use large bore cannula (16 g or bigger)
Volume to give

- First 1000 ml (500 ml x 2) rapidly in 15-20 mins
- Give at least 2000 ml (500 x 4) in first hour
- Aim to replace 2-3x the volume of estimated blood loss.
- If condition stabilizes then adjust rate to 1000 mls / 6 hrly

Monitor BP pulse every 15 Mins and urine Out Put hourly (> 30 ml /hr)

Avoid dextrans they interfere with grouping and x matching as well as with coagulation of blood. In massive haemorrhage order a minimum 6 units whole blood
Do not give Fresh Frozen Plasma (FFP) or platelets until haemorrhage has stopped or at least 5 units of stored blood have been given

Atonic Uterus

The first action is to massage the uterus. Other measures include bimanual uterine compression, Aortic compression, Condom tamponade, and surgery to do uterine artery ligation, Catheter tamponade or Hysterectomy.

Managing Retained Placenta

Ensure Bladder is Empty
Apply Controlled Cord Traction: If fails
Repeat oxytocin 10u IM: If no success in 30 min
Attempt Manual Removal of Placenta

- Give Pethidine and diazepam or Ketamine
- Give antibiotics: (Ampicillin 2g + Metronidazole 500mg)
- Perform procedure and examine placenta for completeness
- Give Oxytocin 20 U/1000 mls NS or RL at 60 dpm
- Monitor BP, Pulse, Pad and Urine output closely
- Add Ergot or Prostaglandin if bleeding continues
- Transfuse PRN and treat for anaemia

Secondary PPH
This occurs after 24 hours to 6 weeks postpartum, mainly due to infection (endometritis)
Look out for RPOC and malignancies such as cancer or cervix and choriocarcinoma
Perform vaginal swabs and scan

Puerperal Sepsis

This is genital tract sepsis caused by contaminated medical equipment or unhygienic medical staff that contaminates the mother's genital tract during the delivery. Other types of infection that can lead to sepsis after childbirth include urinary tract infection, breast infection (mastitis) and respiratory tract infection (more common after anaesthesia due to lesions in the trachea.

An infection acquired during the puerperium which is a serious form of septicaemia. If untreated, it is often fatal (Sellers, 2010).

This is genital tract sepsis caused by contaminated medical equipment or unhygienic medical staff that contaminates the mother's genital tract during the delivery.

Causes
1. Placental remnants which are susceptible to bacteria invasion.

2. Bacterial infection of the uterus due to contaminated medical equipment or unhygienic medical staffs who contaminate the mother's genital tract during the delivery

3. Other infections originating within the body for instance, mastitis, urinary tract infection among others

Signs and symptoms of puerperal sepsis

1. Fever
2. Abdominal pain
3. Foul smelling vaginal discharge
4. Abnormal vaginal bleeding

Management of puerperal sepsis

Treatment.—the treatment is antiseptic throughout. Divide the treatment of puerperal sepsis into three distinct phases, viz., hygienic, surgical, and medical.

Hygiene.—the patient should be placed in a light, well-ventilated room cleared of all unnecessary furniture, curtains, among others. All clothing should be removed, followed by a cleansing sponge bath; patient provided with a short, white slip for gown. The hair of the patient should be removed and a sterilization of vaginal vault made with Lysol solution, strength 1 to

1,000 parts of sterile water. Patient should be placed between two laundered sheets. Diet should be liquid to soft, depending upon severity of lesion, giving abundance of hot water, as nearly all these cases are dehydrated. Attention should be given to free action of both kidneys and bowels. A saline laxative is preferred.

Surgical.—after proper preparation of patient and physician and sterilization of instruments, a careful survey of the womb should be made, examining for retained placenta and lacerations. An intra-uterine wash of Lysol solution, strength as of above, at the temperature of 105 degrees. This will dislodge all fold debris and cleanse the uterine cavity, thus arresting absorption of septic material. If there is found to be any retained placenta, forceps should be applied, inviting its removal. Care should be exercised to not opening any more surfaces for absorption.

The curette is not to be used, and perhaps never in a case of puerperal sepsis, a disturbance of the endometrium will allow free absorption of the offending material, and in this manner create more harm than is possible to do good.

All lacerated or abraded surface should be touched with silver nitrate solution 10 per cent, to close and prevent farther absorption at these points. Intra-uterine wash should be used once in twenty-four hours for two or three days, when it can be withheld, unless further emergency exists for its continuance.

Sterile pads should be provided and precaution taken against the continuance of the infection. If the case is bad, with low resistance of patient, 500 cc. or normal saline solution should be given intra-venously.

Medical.—internal medicine should be directed against the septicemia and for support of the patient. With high and intermittent fever, 5 to 10 grains of quinine should be given at intervals of four to six hours, when temperature is down.

If inflammation of the uterus, treat with antibiotics intravenously

Prevention of puerperal sepsis

Hygiene by medical staff-Hand washing with soap before and after the procedure is very crucial as well as Use of sterile instruments/gloves when conducting the delivery

Personal and environmental hygiene: This should be maintained to prevent infection because the uterus and birth canal at this stage provides a good medium for the growth of pathogenic micro-organism. Advise the mother on personal hygiene, Daily baths and Daily changing of clean pads. The room should be clean and well ventilated. The linen should be clean and changed daily Observe the type and character of lochia to rule out PPH and infection. Observe uterine involution daily. Check for the signs of anaemia .Re check Hb on the 3rd or 4th day after delivery.

Puerperal Psychosis

Definition: It is a mental illness, which involves the rapid onset of psychotic symptoms in a woman following childbirth. Although sometimes confused with postpartum depression, postpartum psychosis is a different disorder and is much less common.

Causes

Puerperal psychosis appears to be much less related to stress factors but more related to biochemical changes. Most mothers with puerperal psychosis will be experiencing mental problems for the first time. The strong association between family history or manic depressive disorder (mother or father) and puerperal psychosis suggests a genetic link.

High Risk People

People at risk of developing this condition include;

- Prime para who have had major obstetric problems for example caesarean section
- Women from the higher social economic group
- Those older than average at the birth of their first child, are married and have a relatively long interval from marriage to the birth of their first child.
- Women who have had a major life event shortly before or after the birth of their child
- Women with personal history of affective disorders

Clinical Presentation

Symptoms of postpartum psychosis can include:

Feelings of being ordered by God or a power outside of oneself to do things one would not normally do, like harming oneself or the baby, Feelings of intense confusion or agitation, Seeing or hearing things that others do not, extreme mood swings, Memory lapses (periods of confusion similar to amnesia), Random or uncontrollable anxiety attacks and Unintelligible speech or communication.

Diagnosis

There will be history of delivery within two weeks. Diagnosis will also be made from the clinical presentation of delusions and hallucinations.

Treatment and Nursing Care

Postpartum psychosis is treated as a serious psychiatric disorder. Prompt treatment can shorten the duration of the illness. Antipsychotic medication is often an essential initial part of treatment. Antipsychotic drugs such as Tricyclic Anti-depressants are given as they are safe for breast feeding mothers. If the woman has insomnia diazepam can be given to promote rest.

Nursing care should aim at providing activities of daily living such as hygiene, nutrition, elimination and others to the mother and the baby. Safety of the mother and her baby should be at the fore front of the care; hospitalization of the mother and her baby should never occur on a general psychiatric ward. Great care must be taken to ensure effective communication and to avoid the ambiguous label of postnatal depression, which serves only to underestimate the profound nature of the illness and may subsequently lead to missed opportunity and suboptimal care.

Although it is widely believed that Electroconvulsive Therapy (ECT) is the treatment of choice, modern management has resulted in much lower usage. However it remains useful where there is a threat of suicide In a specialist mother and baby unit, skilled staff will be able to undertake an assessment of the mother's ability to take care of the baby and her needs to continue this care back in the community..

Deep Vein Thrombosis

Pregnancy increases the risk of Thrombo-embolism six-fold and is one of the common causes of maternal mortality. The Puerperium is especially a high-risk time for Thrombo-embolism because of the increased coagulability of the blood, damage to blood vessel walls during labour and the relative immobility of the postnatal mother. Factors which increase the risk of Thrombo-embolism are: Previous Thrombo-embolism, pressure on the veins of the legs during vaginal delivery or caesarean section, Anaemia, Infection, Immobilization, Use of oestrogens to suppress lactation, Obesity, Age, Varicose veins and Cardiac lesions Dehydration among many more. Treatment of DVT includes therapy with Anti-coagulants like Heparin, and mild to moderate exercises including passive exercises.

Urinary Tract Infections

Once infective organisms gain access to the urinary tract they cause inflammation of the mucosa lining the tract and it becomes oedematous and if the inflammation is not controlled ulceration of the mucosa can occur and the woman can have haematuria and pain in the lower abdomen. Due to presence of bacteria, there will be antigen antibody reaction and can lead to fever. The organisms which cause urinary tract infections can get access to the urinary tract via ascending infections from the lower urinary tract and infections can also be from other routes for example blood stream or lymphatics. More about the Urinary system is discussed in earlier topics.

Anaemia

Definition of anaemia

Anaemia is a reduction in the oxygen carrying capacity of the blood caused by a decrease in red cell production, or reduction in haemoglobin content of the blood, or a combination of these (Fraser & Cooper, 2003).

Causes of anaemia in pregnancy

Anaemia in pregnancy is caused by a combination of factors such as:-

1. Increased demand due to pregnancy

2. Deficient in-take of raw materials such as iron, folic acid. Or vitamin B 12.

3. Acute or chronic blood loss.

4. Increased red cell destruction.

Increased demand due to pregnancy

This is the most common cause of anaemia in pregnancy. The fetus takes almost 300mg of iron from the mother. A further 700mg is needed by the mother's own expanded blood volume, the placenta, and the growing uterine muscle. This means that there is usually a negative balance as the normal diet only affords for 3mg of iron daily to the mother and only 10% of iron in the diet is actually absorbed. Folic acid and vitamin B 12 are equally on demand, and if the intake is not increased deficient will occur. Multiple pregnancy increases the demand on the mother's resources further.

Deficient intake

To manufacture normal red blood cells the body requires protein, iron, folic acid, and vitamin B12. Deficient can be due to:- Lack of the right food or inadequate food, Poor appetite of the pregnant woman, Malabsorption due to chronic diarrhoea.

Acute or chronic blood loss

The woman might start the pregnancy already lacking iron. This might be because of heavy menstrual flows or bleeding in the past pregnancies. These past pregnancies, which often follow each other very closely, might have been complicated by antepartum or postpartum haemorrhage or haemorrhoids which will cause further loss. Further blood loss might be caused by hookworm infestation. Each worm is capable of extracting up to 0.05ml of blood per day. In heavy infections the patient could have up to 1000 worms. You should therefore check the stool of every pregnant woman for hookworm. If you have no laboratory facilities and you are working in an area where hookworm is endemic you can give one dose of Vermox (5 tablets stat) to deworm each woman in pregnancy.

Increased red blood cell destruction

When red cells grow old, they are destroyed in the spleen and the liver. In some pathological conditions where red cells have a strange shape such as sickle cell disease, this destruction is accelerated and the cells have a shortened life, especially when the oxygen in the blood is low. As pregnancy advances the large uterus prevents the lung inflating fully. This leads to lower oxygen concentration in the blood and cell destruction is increased. Infection with falciparum malaria also leads to destruction and haemolysis of the red blood cells. Folic acid is therefore used to replace the destroyed cells. You should give these women extra folic acid throughout pregnancy and also give malaria prophylaxis.

Physiological anaemia of pregnancy

During pregnancy the maternal plasma volume gradually expands by 50% or an increase of approximately 1200 X 10. The total increase in red blood cells is 25%, or approximately 300mls. This relative haemodilution produces a fall in haemoglobin concentration which reaches a nadir during the second trimester in pregnancy and then rises again the third trimester. These changes are not pathological but are considered to represent a physiological alteration of pregnancy necessary for the development of the fetus. Fetal outcomes to mirror this U-curve, with an increased incidence low birth and preterm birth in mothers who have either a very low or very high haemoglobin concentration (Rasmussen 2001). A low haemoglobin level is likely to affect the ability of the maternal system to transfer sufficient oxygen and nutrients to the fetus. High haemoglobin levels are considered to reflect poor plasma volume expansion as found in some pathological conditions such as pre-eclampsia (Sellers, 2010).

Classification of anaemia

The degree of anaemia is categorised as moderate with Hb of 7.0 to 10.9g/dl, Severe with Hb of 4 to 6.9g/dl, Very severe with Hb of less than 4.09g/dl.

Signs and symptoms

A clinical manifestation of anaemia is caused by the body's response to tissue hypoxia. Specific manifestations vary depending on the severity of the anaemia and the presence of co-existing disease.

In Moderate anaemia, there is pallor of mucous membrane and conjunctiva, tiredness, Lack of energy, loss of appetite, dizziness, apathy, severe pallor of the mucous membranes and conjunctiva. In Severe anaemia there is breathlessness, swelling of the feet, proteinuria, raw red tongue, heart palpitations, lassitude, air hunger and parasthesia in fingers and toes.

Effects of Anaemia

1. **On the mother**

Very often the woman is tired and has low resistance to infection during pregnancy and child birth. She is at risk of developing postpartum haemorrhage and can die from bleeding. Women with severe anaemia are poor operative risks in the event that caesarean delivery is needed.

The major effects on the mother include Abortion as a result of the placental insufficiency and mostly occur in the second trimester, Premature labour due to placental insufficiency, Postpartum haemorrhage as a result of reduced platelet count, Venous thrombosis due to reduced mobility and Maternal death as a result of multiple organ failure such as heart failure and renal failure.

2. **On the fetus**

Effects on the fetus include Prematurity due premature labour and placental insufficiency, Low birth weight as a result of reduced nutrient supply, Asphyxia due to insufficient oxygen leading to fetal distress and Intrauterine fetal death due to insufficient nutrients and oxygen

Management of anaemia

Investigations include Clinical presentation and history as well as Laboratory investigations such as Haemoglobin level estimation, Stool to rule out worm infestation and Urinalysis for proteinuria

Moderate anaemia

This can be managed at health centre level with ferrous sulphate 400mg twice a day, Folic acid 5mg daily and dietary advice on foods rich in protein and iron. Treatment of underlying infections such as hookworms, malaria, or urinary tract infections is important.

Severe anaemia

In cases of severe anaemia a woman should be referred urgently to hospital. Transfuse as necessary and if Plasmodium falciparum is suspected manage as severe anaemia. Give ferrous sulphate or ferrous fumerate 120mg orally plus folic acid 400mcg orally daily for six months during pregnancy, then continue for three months postpartum. Where hookworm is endemic, give one of the following anthelmintics- albendazole 400mg orally once or medendazole 500mg orally stat or 100mg twice a day for three days. If hookworm is highly endemic repeat the anthelmintics twelve weeks after the first dose.

Nursing management

You should identify the woman at risk of anaemia by taking accurate history for example medical, social and obstetric history. Anaemic women can also be identified by careful physical examination.

Problems identified

1. Activity intolerance related to weakness and malaise as manifested by difficult in tolerating increased activity (increased pulse, respiration)

Nursing intervention: - plan care to alternate periods of rest and activity to provide activity without tiring the patient. Limit visitors, phone calls, noise and interactions by hospital staff to reduce demands placed on patient. Monitor vital signs to evaluate activity tolerance. Monitor heamatocrit and haemoglobin as a guide to planning activities.

2. Imbalanced nutrition:- less than body weight related to poor nutrition intake anorexia and treatment as manifested by weight loss, low serum albumin, decreased iron levels, vitamin deficiencies below usual body weight.

Nursing intervention: - teach patient about foods rich in protein, iron, calories and other nutrients to increase intake of essential nutrients needed for haematopoiesis. With input from the patient establish range of optimal weight comes and dietary plan to involve patient and increase compliance. Suggest eating small frequent meals with snacks throughout the day.

3. Ineffective therapeutic regime management:- related to lack of knowledge about appropriate nutrition and educational regime as manifested by questioning about lifestyle adjustments, diet, medication prescriptions.

Nursing intervention: review and teach patients about nutrition and medication information to promote compliance. Teach about and monitor response to supplementary drugs that aid in red blood cell production because it is often difficult to correct anaemia by diet alone. Suggest follow up resources to help the patient maintain gains and adjustments throughout recovery.

4. Hypoxemia related to decreased haemoglobin: - assess for manifestations of hypoxemia such as dyspnoea, decrease in oxygen saturation, cyanosis or initiate early intervention. Transfuse with blood products as ordered to increase red blood cells. Monitor haemoglobin to determine severity of anaemia and response to treatment. Teach effective breathing exercises and relaxation techniques to relieve dyspnoea and to promote maximum thoracic excursion. Continue monitoring and observing the patient throughout her antenatal care to detect maternal and foetal abnormalities. Monitor the foetal heart rates and frequency, give the mother a kick chart and educate her on how to use it. Check the mother's blood pressure, temperature and pulse throughout her admission.

Preventive measures of anaemia in pregnancy

Instruct the community on proper dietary habits. Each family should have a vegetable garden, and green vegetables should not be overcooked as this destroys the folic acid. Also encourage the mother to practice child spacing so that there is time between each pregnancy for her to replenish her body resources. In addition teach proper disposal of faeces to avoid hookworm infestations where possible people should wear shoes. Conduct mass campaigns to eradicate hookworm and control of malaria. Prevent or treat antepartum and postpartum haemorrhage adequately. In the meantime give the following supplements to each woman throughout pregnancy: Ferrous sulphate 200mg three times a day and Folic acid 5mg daily

Apart from the above, give Fansidar after 16 weeks of gestation and continue every fourth week for a total of 3 doses. Reduce hookworm by de-worming all pregnant women and detect the anaemia early and give adequate treatment. Lastly encourage mothers to sleep under the mosquito net to prevent Malaria.

Complications of anaemia in pregnancy

Anaemia in pregnancy can lead to Low birth weight, Abortion, Postpartum haemorrhage, Pre-term labour and Ante partum haemorrhage

Conclusion

In conclusion, we can say anaemia in pregnancy is a condition in which there is reduced oxygen capacity in the blood due to reduced red blood cells, a low concentration of haemoglobin or a combination of both. This is due to iron deficiency, folic acid deficiency, metabolic disorders and haemoglobinopathies.

There is increased risk of low birth weight, preterm labour leading to prematurity and small for gestational age babies due to intra uterine growth retardation. Intra uterine death is also common usually due to placental insufficiency leading to hypoxia. Therefore, the management is directed towards raising the haemoglobin levels, so that the woman enters labour and

puerperium with a much higher haemoglobin level. With proper management antenatally, anaemia in pregnancy can be minimised.

2.21 Management of a Woman With Difficult Delivery

Nurses must always remember that even though most pregnancies and births are uneventful, all pregnancies are at risk. Any pregnancy can develop a potentially life- threatening complication that would require major obstetrical intervention to survive.

Complications related to pregnancy and child birth are among the leading causes of morbidity and mortality of women of reproductive age. Management of complications of labour presents a nurse with a challenge of recognition and diagnosis both in antenatal period and during labour. It therefore demands that they should be dedicated and vigilant throughout the process of providing care to a woman during pregnancy, labour and postpartum. Depending on the outcome of the pregnancy, it may be necessary for the woman to undergo Induction, Instrumrnt delivery or Caesarean section.

Induction of Labour

This is an intervention to stimulate uterine contractions before the onset of spontaneous labour. Before induction, the cervix is checked to make sure it is favourable (soft, thin, partly dilated) if so, Labour is induced using oxytocin. (Olds et al, 2004).

The cervix is assessed by the use of a bishop score. The Bishop Score grades patients who would achieve a successful induction; a score that exceeds 8 indicates that the patient is likely to achieve a successful vaginal delivery.

Table 2: The Bishop Score

PARAMETERS	0	1	2	3
Cervical dilatation	<1cm	1-2 cm	2-4 cm	>4 cm
Cervical effacement	0% effaced	0-50 % effaced	50-75% effaced	>75% effaced
Cervical consistency	Firm	average	soft	-
Cervical position	Posterior	middle	anterior	-
Station of Presenting Part	-3	-1	+1	+2

Interpretation of the Bishop score

The following is how the Bishop score should be interpreted with appropriate action;

Indications for labour induction with oxytocin if the Bishop Score is >= 5

Indications for cervical ripening with prostaglandins: if Bishop Score is <5 with Membranes intact and with No regular contractions. If the Cervix is unfavourable (firm, thick, closed) ripen the cervix using prostaglandins or misoprostol or even a Foley catheter

Misoprostol: Place 25mcg in the upper vagina. Repeat after 6 hours if required. If there is no response after two doses of 25mcg, increase to 50mcg every 6hours.

Take Note:

Do not use more than 50mcg at a time and do not exceed 4doses of Misoprostol.

Cervical ripening using Ballon catheter

Prostaglandin does not suit all women and there will be circumstances in which a doctor may recommend using a cervical ripening balloon catheter. This catheter is inserted into the cervix and the balloons inflated with saline, thus applying pressure to the cervix. The pressure should soften and open the cervix, thereby preparing the body for labour. When the catheter is in place, a woman stays in hospital but can be able to move around normally. Fifteen hours after the catheter has been inserted or when the catheter falls out, woman would be re-examined. When the following occurs, the woman should inform the nurse; the catheter falls out and there are regular painful contractions; 5 minutes apart in prime, or 10 minutes apart for subsequent pregnancy, when membranes rupture or when there is cervical bleeding.

Induction of labour using oxytocin

If the cervix is favourable (soft, thin, partly dilated) use oxytocin to induce labour. Oxytocin 10 IU in 500mls of Normal Saline or Ringers Lactate is used to induce labour. Infusion is started at15drops/min. It is increased by 15drops every 30minutes, until contractions are established(three contractions in ten minutes) and each contraction is lasting between 45 and 50 seconds (WHO,2010).

Nursing management during induction

Emotional and psychological support: The care of the emotional and psychological aspect of the woman and her family is very crucial. If Induction was indicated by IUFD, the experience of both a birth and death at the same time is very traumatizing for a mother and her family. Explain to the woman and family about the death of foetus after confirming that the foetus is truly dead. Discuss the option courses of action which could either be waiting for spontaneous delivery to occur or active management.

Pain relief is cardinal; opiods can be used, like Pethidine 100mg prn.

Hygiene and Infection prevention are also cardinal to prevent Puerperal sepsis. Sexual intercourse should be avoided for 4 to 6 weeks and starting another pregnancy should be delayed at least 6 months, to facilitate significant healing of the genital tract (Fraser et al, 2014).

Summary

In this topic you have learnt that Induction of labour could be necessitated as a result of IUFD, and thus there is need for the Cervix to be favourable before induction. The Bishop score is used to assess cervical favourability for Induction. Oxytocin is the drug used for labour induction, which should be administered in 500 ml of Normal saline or Ringer's lactate. Emotional support, pain relief and infection prevention are cardinal during labour induction.

Instrument delivery

Vacuum extraction (Ventouse delivery)

Vacuum extraction is a method of instrumental delivery which involves the use of a vacuum device as a traction instrument to assist delivery (Henderson and Macdonald 2004).

The Ventouse or vacuum extractor consists of a cup which is attached to the foetal scalp by suction. Traction is applied by means of a chain and the foetal head is drawn out of the vagina. It takes 10 – 15 minutes to apply.

The technique was developed from early works by James Young Simpson, the Edinburgh professor of obstetrics already famous for his forceps design. He introduced the first successful obstetric Vacuum Extractor in 1849. The modern version was developed by Malmstrom in 1956 (Olds et al, 2004).

The equipment

The original vacuum extractors were of a very simple design, with a device similar to a bicycle pump being used to obtain the vacuum. Modern vacuum extractors use an electrical pump which has much more sensitive control (Henderson and Macdonald 2004). Originally the cups were metal, but softer cups which have been available since the early 1980s are proving more popular. Previously the metal cup formed a 'chignon' but now the soft cup relies on covering a larger surface area in order to develop sufficient traction and this has led to less trauma.

Indications for Vacuum Extraction

The following are the indications for Vacuum extraction:

1. Mild foetal distress in second stage of labour in the absence of Cephalo pelvic disproportion.
2. Delay in second stage of labour
3. Malpositions; Occipital lateral and occipital posterior position
4. Elective shortening of the second stage of labour. It is required in some maternal disorders like cardiac, cerebrovascular, or neuromuscular conditions, in which normal voluntary expulsive efforts by the mother are either contraindicated or impossible.
5. Maternal exhaustion.

Contraindications

Vacuum extraction cannot be performed in conditions such as operator inexperience, Malpresentations, for example face, brow, breech, Preterm labour or less than 36 weeks gestation, Known or suspected fetal macrosomia, suspected foetal coagulopathy, inability to achieve a correct application (midline, over flexion point), uncertainty concerning fetal position or station not resolved by examination or real-time ultrasound study and suspicion of fetopelvic disproportion (advanced cranial molding, bone overlap, caput)

The Procedure

Pre requisites for Vacuum Extraction

Informed consent

Routinely discussing possible obstetric interventions with families at an earlier time during the pregnancy as part of routine prenatal care is important because of the controversy concerning bedside consents in acute situations. When antepartum discussions have occurred and the need for an instrumental delivery procedure occurs during labour, misunderstandings are reduced

The woman and her partner should be fully informed throughout labour of progress and developments that are taking place. Full explanations should be given of the procedure itself and the need for it (Bennet, Brown 1996), this will help to allay anxiety and enable the woman and her partner makes an informed decision. Once the decision has been made, an appropriate analgesia must be offered

Prepared physician

The operator must be knowledgeable with the procedure. The equipment and techniques must also be appropriately applied during the procedure.

Prepared patient

The initial requirement is always informed consent. Thereafter, and prior to an extraction attempt, always ensure the following: Full dilatation of the cervix, ruptured membranes, positive identification of presentation and position, no appreciable Cephalo-pelvic disproportion and definite engagement of the head.

Preparation of the woman

Position

The woman is placed in lithotomy position, both legs positioned simultaneously to avoid strain on the woman's lower back and hips. The midwives and other medical staff should be mindful that this is an undignified and uncomfortable position especially for a tired woman with a weighty gravid uterus in advanced labour. Therefore privacy should be maintained at all times throughout the procedure by covering the vulva area and maintaining a minimum number of staff during the procedure. The woman should be tilted towards the left at an angle of 15 degrees to prevent aortocaval occlusion. This is achieved by use of a rubber wedge under the mattress.

Appropriate technique is important when using vacuum extraction. The safety and success of vacuum-conducted extraction operations depend on the following:

1. The accuracy of the initial cup application that is cup centre over flexion or pivot-point.
2. Case choice
3. The traction technique, including degree of effort (number of tractions), vector of traction, method of applied force
4. The fetal cranial position (including deflection) and fetal station at the time of application
5. The cup design
6. The fetopelvic relationship

Procedure

The woman's vulva area is thoroughly cleaned and draped with sterile towels using aseptic technique; the bladder is emptied and if catheterized, the balloon is deflated. The position of the foetal head is determined and an appropriate sized cup selected. The cup is placed against the foetal head as near to the occiput as possible, ensuring that no cervix is trapped beneath it.

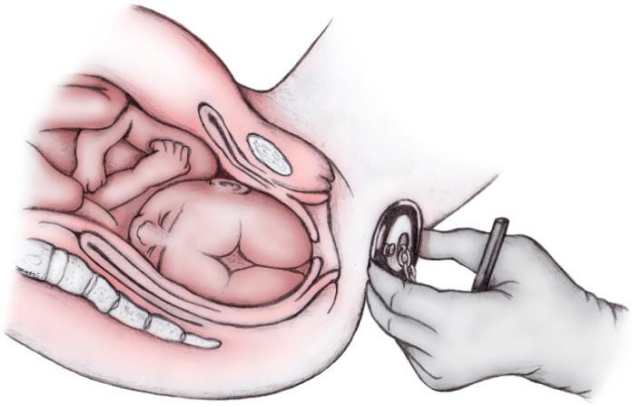

Figure 12: Vacuum Extraction Source: O`Grady, 2012,

The vacuum is then built up to a negative pressure of 100-150 mm Hg in one step. Once this pressure has been obtained, the operator waits 1 – 2 minutes for a chignon to form, then exerts steady, gentle traction on the foetal head, in conjunction with uterine contractions and the mother's expulsive efforts.

With descent of the head rotation to an occipito-anterior position may be effected if necessary. Traction is exerted in the direction of the curve of Carus and the head is controlled carefully at crowning. Once the delivery is completed, the vacuum is released and the cup is detached.

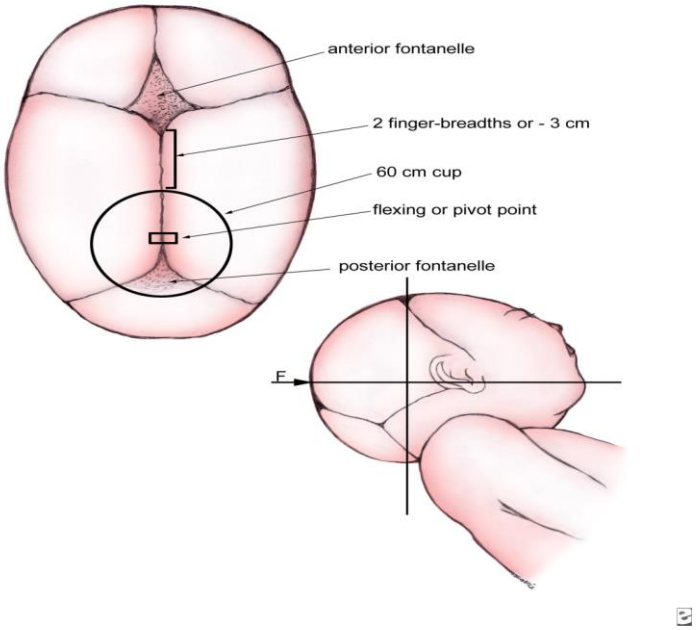

Figure 13: Site for placing cap for vacuum extraction

Complications of vacuum extraction

The following would be the complications of Vacuum extraction;

1. **Failure of the procedure –** an attempted vacuum extraction maybe unsuccessful. Exerting too much traction will result in the cup coming off. In unskilled or impatient hands, the cup is also likely to come off.
2. **Maternal trauma** to the mother can occur if cup is not well applied to the foetal scalp.
3. **Foetal trauma** to the foetal scalp is the most common complication of vacuum extraction
4. **Chignon –** this is an area of oedema and bruising where the cup was applied on the slightly mobile foetal scalp.
5. **Cephalohaematoma**
6. **Cerebral trauma –** a few babies may suffer some degree of cerebral trauma, such as tentorial tear (Sellers, 2010).

Vacuum extraction can be used to expedite delivery of the baby in the event of insufficient maternal effort in full cervical dilatation. Correct equipment and technique need to be employed; otherwise procedure failure and maternal or fetal trauma

can ensue. The baby can have a Chignon or even tentorial tears that are fatal ice caution are not applied. Therefore a trained skilled person needs to perform this procedure.

Caesarean Section

Caesarean section is described as being an operative procedure that is carried out under anaesthesia whereby the foetus, placenta and membranes are delivered through an incision in the abdominal wall and the uterus. This is usually carried out after viability has been reached that is, 28 weeks of gestation onwards, (Fraser et al 2005).

Types of Caesarean Section

Olds et al, 2004 describe Caesarean section to be in two kinds namely:

(i) Lower segment caesarean section.
(ii) Classical caesarean section.

Lower Segment Caesarean Section (LSCS)

This is a transverse incision through the lower segment of the uterus. The lower segment scar heals well because during the puerperium, the lower segment is not as active as the upper segment which continues to contract. The scar of the lower uterine segment is also covered by the peritoneum of the utero- vesical pouch and this protects it from being infected This incision can be used for elective caesarean section where the operation is performed before the onset of labour.

This type of incision rarely raptures and the woman can be allowed to deliver vaginally in the subsequent pregnancies in the absence of Cephalopelvic Disproportion (CPD)

Classical Caesarean Section

The incision is vertical or longitudinal through the muscles of the upper uterine portion. This may be used in conditions where an incision in the lower segment will be dangerous for example anterior placental praevia, prolonged obstructed labour and lower uterine fibroids.

Indications

Elective Caesarean Section

This indicates that the decision to carry out the procedure has been taken during the pregnancy, therefore before labour has commenced. If the indication for caesarean section has been a non-recurring one for example placenta praevia, vaginal delivery after caesarean may be attempted. Repeat caesarean section may be indicated in, for example, cephalopelvic disproportion, or on a uterus that has been scarred twice. Within the umbrella of 'elective' caesarean there could be merit in reclassification. For example, there are those operations that are truly 'elective' in that they are booked around term at a time convenient for mother and surgeon. The other category includes 'scheduled' caesarean section when it becomes clear that early delivery is required, but there is no immediate compromise to mother or foetus.

Definite Indications

These include: - Cephalopelvic disproportion, major degree of placenta praevia, High order multiple pregnancy

Possible Indications

The contraindications include the following conditions:-

1. Breech presentation
2. Moderate to severe pre-eclampsia
3. A medical condition that warrants the exclusion of maternal effort for example Cardiac condition.
4. Diabetes mellitus.
5. Intrauterine growth restriction
6. Antepartum haemorrhage
7. Certain fetal abnormalities (for example hydrocephalus).
8. Prevention of Mother to Child Transmission of HIV (PMTCT)

Emergency Caesarean Section

This is carried out when adverse conditions develop during pregnancy or labour. Standards have been suggested for the maximum time that should elapse from the decision to deliver to the actual time the baby is born. However, this is less straightforward as in some cases there is real 'emergency' and everything needs to be in place for immediate delivery of the baby if it is to survive (for example cord prolapsed with foetal compromise). Then there are other situations where delivery is 'urgent' but more time can be taken to prepare for the operation and proposed actions can be discussed with the parents in a more relaxed manner. The following are examples of urgent/emergency reasons for caesarean birth:-

- Antepartum haemorrhage
- Cord prolapsed
- Uterine rupture (dramatic / scar dehiscence)
- Cephalopelvic disproportion diagnosed in labour.
- Fulminating pre-eclampsia
- Eclampsia
- Failure to progress in the first or second stage of labour and fetal compromise if delivery is not imminent.

Pre-Operative Care

For elective operation

The client is admitted a day or two before the operation depending on the condition of the patient and the doctor's preference. A proper history is collected concerning the indication and treatment. A full physical examination is done to rule out any abnormalities such as pallor and oedema.

The results of any blood tests which have been requested are obtained. Blood is grouped and saved. In cases of pre-eclampsia, urea, electrolyte levels and clotting factors are obtained. Ultra sound is done to assess foetal maturity and type of placental location. The patient is reassured that she is in the right hands and the consent for the operation is obtained. The client is oriented to the geography of the ward. The anaesthetist discusses with the obstetrician the type of anaesthesia to be used. Sheaving depends on the doctor's preference but it may not be necessary as it predisposes to infection.

Prescribed sedatives are given a night before the operation to relax the patient. The patient is nil orally at least for 6 hours before the operation to prevent aspiration pneumonia.

On the morning of the operation the patient is asked to take a bath for hygiene and to prevent infection. She is dressed in a clean gown and all artificial appliances such as dentures are removed. All make up and jewellery is removed. A Foleys catheter is inserted for urinalysis and also to prevent injury to the bladder during the operation. Intravenous normal saline is commenced and pre-medication such as atropine or Phenergan are given as prescribed by the anaesthetist.

Vital signs of temperature, pulse, respiration and blood pressure are done and recorded on the anaesthetic chart. These act as base line data. The identity band which comprises of name, sex, age diagnosis, type of operation and ward is applied on the forehead or on arm.

Preparation for Receiving the Baby

You should prepare a baby cot with the following supplies at hand:

1. Delivery pack
2. Cord clump
3. Identity band
4. Neonatal forms to be written in advance before the mother is anaesthetized
5. Fetal scope
6. Pre warm incubator to prevent hypothermia.

The patient is escorted to theatre with her notes. The post natal ward and the special care baby unit are informed to receive the mother and the baby respectively.

Post-operative care

Immediate care

Observations

The blood pressure and pulse should be recorded every quarter hour in the immediate recovery period. The temperature should be recorded every 2 hours. The wound must be inspected every half hour to detect any blood loss. The lochia should also be inspected and drainage should be small initially. Following general anaesthesia the women is nursed in the left lateral or 'recovery' position until she is fully conscious, since the risks of airway obstruction or regurgitation and silent aspiration of stomach contents are still present.

Analgesia: This is prescribed and is given as required. If the mother intends to breastfeed the baby should be put to the beast as soon as possible. This can usually be achieved with minimal disturbance to the mother. Postoperative analgesia may be given in a variety of ways such as:-

1. An epidural opioid
2. Rectal analgesia, such as diclofenac (this is contraindicated if there is continuing bleeding poor urine output, a history of sensitivity to NSAIDS or peptic ulcer).
3. Intramuscular analgesia (though this is never given in conjunction with epidural opioid because of the risk of cumulative effects.
4. Oral drugs (for example dihydrocodeine, paracetamol).

Antiemetics (for example cyclizine; prochlorperazine) are usually prescribed by the anaesthetist.

Care Following Regional Block

Following epidural or spinal anaesthesia the women may sit up as soon as she wishes, provided her blood pressure is not low. All observations are recorded as described above. Fluids are introduced gradually followed by a light diet. The intravenous infusion should be in progress for about 12 hours. Care must be taken to avoid any damage to the legs, which will gradually regain sensation and movement.

As it is possible that an opiate administered via the epidural route may cause some respiratory depression, the woman's respiratory rate must be recorded. This means of pain relief offers the advantage of excellent analgesia without motor block and also seems to give a feeling of well-being. Women are usually able to become mobile very quickly, which reduces the risk of deep venous thrombosis. It is also more conductive to the woman's psychological health.

Ideally the baby should remain with his mother and they should be transferred to the post natal ward together as soon as possible.

Care in the Postnatal Ward

When mother and baby are transferred to the postnatal ward, the blood pressure, temperature and pulse are usually checked every 4 hours. The intravenous infusion will continue and the urinary catheter may remain in the bladder until the women is able to get up to the toilet. The wound and lochia must initially be observed at least hourly. The baby should

remain with her mother, and the midwife should offer extra help to endure that the mother has adequate rest. The mother is encouraged to move her legs and to perform leg and breathing exercises. The physiotherapist will usually teach these and may give chest physiotherapy. Prophylactic low dose heparin and TED anti embolism stocking are often prescribed. The woman is helped to get out of bed as soon as possible following caesarean section, and is encouraged to become fully mobile.

Urinary output must be monitored carefully both before and after removal of the urinary catheter; women may have some difficulty with micturition initially and the bladder may be reported to the doctor.

Women who have had a general anaesthesia for caesarean section may feel very tired and drowsy for some hours. A woman may complain of a feeling of detachment and unreality and may feel that she does not relate well to the baby. The woman who is concerned should be reassured and be given the opportunity to talk freely.

Appropriate analgesia must be given as frequently as necessary. The mother must be encourages to rest as much as possible and tactful advice may need to be given to her visitors. If the mother becomes too tired, help is needed with the care for the baby. This should preferably take place at the mother's bedside and should include support with breast feeding. The new clip-on cots which may be attached to the mother's bed can facilitate the handling of baby for the mother.

Some women may have a lingering feeling of failure or disappointment at having had a caesarean section and may value the opportunity to talk this over with the midwife (WHO, 2003).

Related Information Education and Communication (IEC)

The woman who undergoes Caesarean section is educated in the importance of Family planning at least 2 years, Wound care, Hygiene, Diet, Post natal check-ups Children's clinic.

Complications

For the sake of simplicity the complications following Caesarean section are divided into maternal complications and fetal complications s follows;

Maternal complications

- Haemorrhage
- Hypoxia (anaesthesia depress respiratory centre)
- Drug over dose
- Aspiration pneumonia
- Mendelson's syndrome
- Thrombo embolism
- Infection
- Incisional hernia
- Intestinal obstruction
- Uterine rapture in subsequent pregnant
- Wound deluscence – gapping
- Injury to the bladder, ureters
- Hypostatic pneumonia

Fetal Complication

- Respiration distress syndrome
- Asphyxia
- Injury to the baby
- Prematurity

The obstetric emergencies discussed in our document are quite common in our health facilities; therefore the actions of the midwife and other members of the health team are fundamental to the wellbeing of the mother, baby and the partner. Awareness of local emergency procedures and knowledge of correct use of any supportive equipment are essential. Midwives in all practice settings should maintain skills that enable them to act in an emergency. The use of multiprofessional workshops to rehearse simulated situations can ensure that all members of the care team know exactly what is required when needed.

2.22 Drugs Used in Obstetrics

The following is a list of some drugs used in Obstetrics. Their Pharmacodynamics and Pharmacokinetics are ascribed in detail in Pharmacology;

- Paracetamol
- Ferrous sulphate
- Folic acid
- Oxytocin
- Pethidine
- Ergometrine
- Coartem
- HAART ‘
- Prostaglandin E2.
- Sulphadoxine Pyrimethamine
- Cotrimoxazole
- ATT among others

1.23 Unit summary

We have come to the end of unit 2 and we have discussed various topics under this unit. Among the topics covered include definition of Reproductive health and integrated Reproductive health. We defined reproductive health as a state of physical, mental, and social well- being in all matters relating to the reproductive system, at all stages of life and integrated Reproductive Health as a response to expanding needs arising from; increased demand for family planning, greater awareness of maternal and neonatal mortality and morbidity, and a growing burden of reproductive ill health. Some of the components of IRH include family planning, maternal nutrition, abortion and STIs/HIV/AID. We went on to look at the component of safe motherhood which include family planning, antenatal care and post abortal care. We further discussed the applied anatomy of the male and female reproductive system and looked at the internal and external genitalia for both male and female. Some of the structures of the breast covered are the nipple and areola. We also looked at the physiological changes occurring in pregnancy under the following heading Reproductive system cardiovascular system, endocrine system, skeletal system, alimentary system and respiratory system. The minor disorders of pregnancy discussed where nausea and vomiting, pica, backache, heartburn among others. We further tackled Ante natal cares were only for visits are recommended unless a woman develops other problems. The emphasis of focused antennal care is on quality and not quantity. Components of FANC include early detection of complications and prompt treatment, disease prevention, birth preparedness and complication rediness and health promotion. In the implementation of PPTCT, option B+ has been adopted in which a pregnant woman who is HIV positive is commenced on ART regardless of the CD4 count. We continued to look at the essential care of the new born baby in which we discussed agar scoring to determine the baby’s condition, provide warm to prevent hypothermia, initiating breastfeeding early to prevent hypoglycaemia and maintaining asepsis

when cleaning the cord to prevent infection to the baby. We then went on to look at postnatal care in which we said it is the attention given to the general mental and physical welfare of the mother and infant during puerperium. This Care is directed toward prevention, and early detection and treatment, of complications and diseases. Postnatal care also includes; counseling, advice, and services on breastfeeding and family planning. We looked the medical conditions like Malaria and Anaemia whose effect on the fetus are premature birth, abortion and intra uterine growth retardation.

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UNIT 3: GYNAECOLOGY AND GYNAECOLOGICAL NURSING

3.1 Introduction

Now that you have completed unit 2 where you discussed the components of Safe Motherhood, you are welcome to unit 3. In unit 3, we are going to discuss the care of women with gynaecological conditions. At this point you will be expected to relate what you covered in unit 2 to the content of this unit to enhance your understanding.

3.2 Objectives

By the end of this unit you will be able to:

1. Explain menarche
2. Describe adolescent and adolescent reproductive health
3. Explain menopause
4. Outline the investigations and procedures related to gynaecology and gynaecological nursing
5. Describe the management of the client with gynaecological disorders
6. Describe the pre and post operative care of the patient undergoing gynaecological operations
7. Outline the drugs used in gynaecology
8. Discuss the management of abortions
9. Describe the package of Post Abortal Care (PAC)
10. Apply the knowledge and skill in the management of the patient with ectopic pregnancy
11. Demonstrate the management of the patient with Vulvo-vaginal infections
12. Describe the Management of clients with Pelvic Infections
13. Explain the management of clients with fertility problems
14. Demonstrate the management of patient with fistulae
15. Describe the management of patients with tumors
16. Outline cervical screening services

3.3 Menarch

In this lesson we are going to discuss menarche. I am sure we all know what menarche is. Menarche is the first menstrual cycle, or first menstrual bleeding, in female humans. From both social and medical perspectives, it is often considered the central event of female puberty, as it signals the possibility of fertility.

Girls experience menarche at different ages. The timing of menarche is influenced by female biology, as well as genetic and environmental factors, especially nutritional factors. The worldwide average age of menarche is very difficult to estimate accurately, and it varies significantly by geographical region, race, ethnicity and other characteristics. It usually starts sometimes between ages 11 and 14 years. But it can happen as early as age 9 or as late as 15 years.

First you are going to define menarche, state the physiology of menarche and finally explain the menstrual cycle. The key terms in menarche include the following:

Menarche is a girl's first menstrual cycle that usually happens after several years of pubic hair growth, breast development, and rapid growth known as a "growth spurt.

Menstrual Cycle

This is a series of cyclic events that take place in a rhythmic fashion during the reproductive period of a woman's life. It starts at the age of 12-15 years which marks the onset of puberty (Menarche) Ceases at the age of 45-50 years (Menopause).

Hormones: This is a complex chemical substance produced in one part of organ in the body that initiates or regulates the activity of an organ or a group of cells in another part.

Next you are going to look at phases of menstrual cycle.

Phases of Menstrual Cycle

The phases of menstrual cycle include the following:

- Follicular-proliferation phase (Oestrogen-dominant phase with development of grafian follicle, oocyte and endometrium),
- Ovulation (release of ovum), when the grafian follicle raptures and releases the oocyte what remains is the corpus luteum also known as yellow body. This is now responsible for secretion of the female hormone called progesterone.
- Luteal secretory phase(progesterone dominant phase maintaining the endometrium for conception), and
- Menstruation or pregnancy

Physiology of menarche

At about the age of 10 to 13 years or 2 years before the girl's first menstrual period (menarche), the hypothalamus begins to secrete releasing hormones. This leads to the release of adrenal androgens and pituitary Human Growth Hormone HGH) into the circulation hence, appearance of secondary sexual characteristics and the growth spurt. The physical growth slows down as the first menarche approaches. This is because increasing amounts of oestrogen and progesterone are secreted by the ovaries and feedback mechanism negatively, reducing human growth hormone secretion. This is called the onset of puberty.

Shortly after the secretion of HGH starts, the hypothalamus begins to release gonadotophin –releasing hormone (GnRH) which induces the release of follicle stimulating hormone and luteinizing hormone from the pituitary gland that in turn bind to the receptors in the ovaries and induce the secretion of oestrogen and progesterone, these hormones control the production of ova or eggs. The reproductive phase only lasts till the age of 45-50years. This reproductive phase is characterised by the presence of menstrual cycle. (Llewellyn-Jones, 2005)

Ovarian Hormones

1. Oestrogen

This comprises oestriol, oestradiol and oestrone produced under the influence FSH by granulossa and theca cells in increasing amounts. During the menstrual cycle, oestrogen causes proliferation of the endometrium and also inhibits FSH.

2. Progesterone

This is produced by the corpus luteum under the influence of LH. It causes changes in the lining of the uterus in readiness for possible arrival of the fertilized ovum. It also causes the body temperature to rise by 0.5^{o}C after ovulation.

Self-Assessment Test

Take time to revise in order to test your understanding of the topic.

1. Which one of the following statements is true about menarche and menstrual cycle?

2. Which one of the following is not a phase of the menstrual cycle?

3. Which hormone is directly responsible for the production of oestrogen?

4. Where is oestrogen produced?

5. Where is the corpus luteum found and what hormone does it produce?

6. What effect does oestrogen and progesterone have on the uterine lining?

Answers

1. Menarche is a girl's first menstrual cycle that usually happens after several years of pubic hair growth, breast development, and rapid growth known as a "growth spurt

Menstrual cycle is a series of cyclic events that take place in a rhythmic fashion during the reproductive period of a woman's life. Starts at age of 12-15 years which marks the onset of puberty (Menarche) Ceases at the age of 45-50 years (Menopause)

2. - Menstrual phase

- Follicular (Regenerative/ proliferative) phase

- Ovulatory phase

- Luteal /secretory phase

3. Follicle stimulating hormone

4. Graafian follicle

5. In the ovary and produces progesterone

6. In the uterus, oestrogen makes the inner wall of the uterus to be being built up again in order to receive the product of fertilisation, if there is one. While progesterone thickens further the inner lining of the uterus.

3.4 Adolescent and Sexuality/ Adolescent Reproductive Health

It is important to note that Adolescence is a dynamic period of growth and development that bridges childhood to adulthood, while being distinctly different from both groups. Adolescence is "characterized by many rapid, interrelated changes of body, mind and social relationships" (WHO, 1997). Adolescence starts with a period of very rapid physical growth accompanied by the gradual development of reproductive organs, secondary sex characteristics and menarche in girls. An Adolescent is defined as persons between 10-19 years of age, a period when there is rapid growth and development of the body, mind and socio relationships (Indralal D.S, 2006). Adolescent Reproductive Health is a comprehensive approach to Reproductive Health in a response to expanding needs arising from; increased demand for family planning, greater awareness of maternal and neonatal mortality and morbidity, and a growing burden of reproductive ill health (MoH, 2003). Boys' adolescence is generally longer than girls, as girls in many societies are deemed ready for serious courtship or marriage proposals right after menarche.

The new ideas that adolescents acquire from school and other strong social forces often precedes social change. Not only will they soon bear the future generation, they are also the breeding ground for new ideas, languages, values, and career. Under this topic, we are going to discuss the following components:

- Adolescent Health Problems
- Sexuality and fertility
- Safer sex
- Nutrition and supplements
- Youth Friendly Services
- Peer Education

Adolescent health problems include the following:

- Anorexia nervosa; an adolescent may fear to grow fat and may opt to stay hungry most of the times. They develop excessive loss of appetite.
- Obesity & overweight; some lack guidance on food intake as a result the experience overweight and become obese.
- Adolescent pregnancy; some fall pregnant before their bodies are well developed to accommodate pregnancy and child birth as a result, they experience maternal and neonatal complications.
- Micronutrient deficiency ; sometimes adolescents may not have information on the micronutrients to take and end up with micronutrient deficiency
- Emotional problems; most of the teenagers may not know how to manage stress , hence they will be faced with emotional problems
- Behavioural problems; due to lack of education on how well they are supposed to behave, some would end up being found in bad behavioural activities such as alcohol consumption.
- Substance abuse & injuries; still with scanty knowledge on how bad it is to abuse substance some would indulge in it and violence may ensue resulting in injuring one another.
- Sexually transmitted infection; if education is lacking on prevention of STIs some adolescents may end up contracting STIs
- Thinking and studying problems; some teens end up using drinks they believe can help them stay awake most of the times to enable them study, meanwhile, they would be depriving themselves of rest and they experience studying problems in the end.
- Identity problems; some of them would want to be found with those of opposite sex, would to choose religion of their own among others.

Reasons for adolescents' reluctance to seek help

- Fear,
- Uncomfortable with opposite health worker
- Poor quality perception
- Lack of privacy
- Confidentiality
- Cumbersome procedure
- Long waiting time
- Parental consent
- Operational barrier
- Lack of information
- Feeling of discomfort

Prevention of adolescent health problems

- Health education
- Skill based health education
- Life skill education
- Family life education
- Counselling for emotional stress
- Nutritional counselling
- Early diagnosis & management of medical and behavioural problem

Adolescence:

Impact on adolescence:

- Lack of formal or informal education; most of the adolescents do not receive any kind of education on issues surrounding them such as how to behave, what kind of diet to take and others
- School dropout and childhood labour; sometime adolescents would be subjected to a lot of work there by affecting their performance at school due to insufficient time to study.
- Malnutrition and anaemia
- Early marriage, teenage pregnancies
- Habits and behaviours picked up during adolescence period have lifelong impact
- Lot of unmet needs regarding nutrition, reproductive health and mental health
- They require safe and supportive environment
- Desire for experimentation
- Sexual maturity and onset of sexual activity
- Transition from dependence to relative independence
- Ignorance about sex and sexuality
- Lack of understanding
- Sub optimal support at family level
- Social frustration
- Inadequate school syllabus about adolescent health
- Misdirected peer pressure in absence of adequate knowledge
- Lack of recreational, creative, and working opportunity

Sexuality and fertility

Fertility

Fertility is the ability to conceive and bear children, the ability to become pregnant through normal sexual activity (www.medcinet.com, 2012 accessed on 12/03/15).

Sexuality

Sexuality is the characteristic of the male and female reproductive elements (http://medical-dictionary.thefreedictionary.com/sexuality, retrieved on 11/03/15). Or
The constitution of an individual in relation to sexual attitudes and behaviour (http://medical-dictionary.thefreedictionary.com/sexuality, retrieved on 11/03/15).
A significant proportion of women commence sexual activity during adolescence. Adolescent pregnancy carries an increased risk of adverse health outcomes for young women and their children. Globally, adolescents account for eleven % of all births but contribute to 23 % of the burden of disease related to pregnancy and childbirth. Adolescents aged 10-14 years are five times more likely to die as a result of pregnancy and childbirth than adult women, and maternal conditions are

the leading cause of death among women aged 15-19. Adolescents account for around 14 % of unsafe abortions, an estimated 2.5 million every year. Babies of adolescent mothers have a 50-100 % increased risk of mortality within the first month of life and suffer higher rates of perinatal morbidity compared with infants born to adult women [8, 11]. By impacting on education, employment and economic opportunities, pregnancy during adolescence can also have lasting socio-economic consequences which, in turn, contribute to poorer health outcomes, gender inequity and poverty of adolescent mothers, their families and communities.

Preventing adolescent pregnancy is an essential component of a comprehensive approach to improve adolescents' sexual and reproductive health, which should also include efforts to address adolescents' vulnerability to sexually transmitted infections, HIV and gender-based violence (WHO, 2015), http://www.who.int/reproductivehealth/topics/adolescence/en/)

When national Adolescent Sexual and Reproductive Health strategies are implemented effectively, adolescents and young people are able to obtain the sexuality and reproductive health education they need in their schools and communities, and sexual and reproductive health services they need from health facilities in their communities. This will not result in unwanted pregnancies, unsafe abortions and STIs including HIV infection

Safer Sex

This is intimate sexual practices between partners who use condoms or other means to prevent the exchange of body fluids that transmit diseases (http://medical-dictionary.thefreedictionary.com/Safer+sex, retrieved on 11/03/15).

Although perfect safety is virtually impossible without abstinence, the known risks of infections by human immunodeficiency virus or other organisms transmitted through sexual contact can be reduced by safe sex practices

Screening for Sexually Transmitted Infections (STIs) in adolescents

Sexually transmitted infections (STIs) are a major public health problem in developed and developing countries. Complications of untreated STIs include upper genital tract infections, infertility, cervical cancer, and enhanced transmission and acquisition of herpes viruses, hepatitis viruses, and the human immunodeficiency virus (HIV).

Adolescents should be screened confidentially at every visit at health institutions and youth friendly corners for initiation of sexual activity, sexual contacts and behaviours, and sexual partner(s). Age-appropriate education about sexuality, contraception, and STI prevention should also be offered.

Once an STI is diagnosed, both the patient and her partner(s) should be treated according to the recommended guidelines. Vaccination against HPV for all females aged 9 to 13 years is recommended.

Adolescents with a diagnosis of STI should be encouraged to notify their sex partners and urge them to seek medical evaluation and treatment.

Screening activities for STIs in the adolescent

History taking

-Sexual history;

Adolescents should be screened confidentially about the initiation of sexual intercourse at each clinic visit. Yearly screening for chlamydia and targeted screening for gonorrhoea (for those at increased risk) should be done. Testing for HIV is recommended for sexually active and at-risk youths and should be repeated annually for those at high risk of infection. Screening for additional STIs such as syphilis or hepatitis should be based on symptoms and the presence of additional high-risk factors such as prostitution, drug use and incarceration.

You should also find out how many sexual partners she/he has, if she/he practices protected or unprotected sex, history of STIs and any medication taken, also whether sexual partners were treated. Rescreening should occur with the initiation of

intercourse with a new partner. In patients who have tested positive for gonorrhoea or chlamydia and have been treated, repeat screening after 3 months should be done because the rate of reinfection is high.

Physical Examination

Head to toe examination is done paying particular attention to the genital area.

Screening Tests

These are as follows;

- **In sexually active adolescents**;

  - Endocervical swabs are usually reserved for those who are symptomatic, and require an internal pelvic exam.

  -Screening for gonorrhoea and chlamydia with nucleic acid amplification tests (NAATs) is also possible through vaginal swabs (which can be collected by the provider or the patient) or

  -Urine testing

  Screening for Herpes Simplex Virus HSV

  -Testing should be performed if genital ulcers or other mucocutaneous lesions are present. Viral culture is the preferred method of testing, but its sensitivity is low.

  -Polymerase chain reaction assays are increasingly used and have higher sensitivity than viral culture. Nucleic acid amplification tests (NAAT) testing is also available.

  -Recurrence rates for genital HSV-type 1 infection are significantly lower than for type 2 infection.

  -G-type specific antibody testing is done in asymptomatic patients who report possible exposure, also patients whose partners have histories of genital herpes, and those who have histories of symptoms concerning HSV infection

  Screening for Trichomoniasis diagnosed

  -Diagnosis of trichomoniasis is usually performed in the office by saline microscopy of vaginal secretions, but sensitivity is low.

- For those with suspected infection but negative microscopy results, additional testing options are available by culture, rapid antigen, or NAAT

Nutritional Supplements

Nutritional Supplements have been used for years in a wide variety of areas. Sports players use them to enhance their athletic performance. New moms use them to keep themselves and their little ones in peak health. Often teenagers will use them to keep their body in good condition.

The transitional years from childhood to adulthood can be a difficult time, even more so for those that aspire to be like sports superstars they see on television and in magazines. Many adolescents believe that sports nutritional supplements are an easy way to increase their strength and stamina. However, an adolescent can do much more harm than good to the mind and body by incorrectly intake of wrong supplements.

A typical teenager/adolescent (between the ages of 13 and 19) has a body that is already producing enormous amounts of growth hormones as well as testosterone / oestrogen. It is extremely important at this age not to overload the body in any

one area as this can cause long term problems down the road. There are however some good ideas for supplements that can safely improve your teens overall health and fitness.

1. A good multi-vitamin such as vitamin A, $_{B1, B2, B6,}$ B complex, C, D, E, and K will help an adolescent avoid any nutritional deficiencies. This seems to be an easy one to remember, but too many people forget about it. If you are deficient in even one vitamin or mineral your muscle gains can be severely hampered, not to mention your health.

2. A good protein powder to take in between whole food meals can be an excellent way to increase protein intake to the levels needed to sustain an active teenager. Protein is made up of amino acids, which are the building blocks of muscle. There are several forms of protein including Soy, Egg, and Casein.

3. Healthy fats such as, natural peanut and walnut oils, can be added to protein shakes and other meals.

Teenagers should save the testosterone boosting for when the body starts to naturally decrease its testosterone at around age 25. They should take full advantage of their youth, and the hormones that their bodies are producing naturally. They should not be discouraged from taking nutritional supplements. The proper supplementation can be a vital key to health and fitness.

Also carbohydrates for energy should be provided for the adolescents such as reasonable portions of rice and *nshima*.

Youth Friendly Services

- Reproductive Health services
- Sexual & Reproductive health education
- Contraception
- Pregnancy testing and option
- MTP
- STD/HIV Screening counselling and treatment
- Prenatal & postpartum care
- Well baby care
- Nutritional services
- Growth & development monitoring
- Anticipatory guidance about substance abuse and other risk taking behaviour
- Counseling for life skill development

Screening for various diseases

Peer education

This is a dynamic process, a strategy, a communication channel, system and a tool whereby selected and well trained people in a specific situation contribute to the well-being of others in the same situation (Visser, 2009), or

An approach to health promotion, in which community members are supported to promote health-enhancing change among their peers, or

Peer education is the teaching or sharing of health information, values and behaviour in educating others who may share similar social backgrounds or life experiences.

Areas of Application

Peer education is very popular in the broad field of HIV prevention. It is a mainstay of HIV prevention in many developing countries, among groups which include young people, sex workers, men who have unprotected sex with men, or people who use intravenous drugs.

Peer education is also associated with efforts to prevent tobacco, alcohol and other drug use among young people. Peer educators can be effective role models for young adolescents by promoting healthy behaviour, helping to create and reinforce social norms that support safer behaviours, and also serve as an accessible and approachable health education resource both inside and outside the classroom.

Peer education is also useful in promoting healthy eating, food safety and physical activity amongst marginalized populations.

The Process of Peer Education

A peer education programme is usually initiated by health or community professionals, who recruit members of the 'target' community to serve as peer educators. The recruited peer educators are trained in relevant health information and communication skills. Armed with these skills, the peer educators then engage their peers in conversations about the issue of concern, seeking to promote health-enhancing knowledge and skills. The intention is that familiar people, giving locally-relevant and meaningful suggestions, in appropriate local language and taking account of the local context, will be most likely to be able to promote health-enhancing behaviour change.

There is a great variety in the support provided to peer educators. Sometimes they are unpaid volunteers, sometimes they are given a small honorarium, and sometimes they receive a reasonable salary. The peer educators may be supported by regular meetings and training, or expected to continue their work without formal supports (Boyle et al, 2011)

Boyle, J., Mattern, C. O., Lassiter, J. W., & Ritzler, M. S. (2011). Peer 2 peer: Efficacy of a course-based peer education intervention to increase physical activity among college students. Journal of American College Health

Self assessment

Write true or false for the following statement
The following are adolescent problems;
1. Adolescent pregnancy
2. Micronutrient deficiency
3. Emotional problems
4. Peer education
5. Sexuality and fertility

Answers: 1 T, 2 T, 3 T, 4 F,5F

3.5 Menopause

The next topic of discussion is Menopause.
As women age, many experience transitions that present challenges such as changing health, work or marital status that require adaptation. This is true with the changes associated with menopause.
Menopause is a stage in a woman's life when menstruation stops, thus ending her childbearing years. It is a natural process and not a disease.

Although it is a natural process and not a disease, many women approach menopause with an apprehension that they would begin to suffer from mental and physical conditions.
Menopause should and can be the beginning of a positive and satisfying period of your life.
It is true that the risk of several health problems increases after menopause but you need to regard it as an opportunity for availing preventive health care for various health problems.
This discussion therefore, focuses on basic facts of menopause, the management of some of its troublesome symptoms and its effects on the various other organs and systems of the body.
We will also look at tips on how to deal with several health problems that may occur after menopause.

Definition of Menopause
Menopause is the permanent cessation of reproductive fertility occurring some time before the end of the natural lifespan.
The term menopause describes the reproductive change in human females, where the end of fertility is traditionally indicated by the permanent stopping of monthly menstruation or "menses" (http://en.wikipedia.org/wiki/Menopause).

Menopause begins after the last episode of menstrual bleeding. It is recognized 6 to 12 months of amenorrhea, occurring between the ages of 41 to 52 years.
During this transition, the ovaries start producing lower levels of natural sex hormones—oestrogen and progesterone.

Age at Onset of Menopause
The age of onset of menopause may be influenced by nutritional, cultural or genetic factors. The exact physiological mechanisms initiating its onset are not known. Onset occurs when ovarian function ceases, resulting in oestrogen levels diminishing to the point the menstruation stops. Generally ovulation ceases prior to menopause.

In the **Western World**, the most typical age range for menopause is between the ages of 40 and 60 and the average age for last period is 51 years.
In developing countries the median age of natural menopause is considerably earlier, at 44 years.

Functions of Female Sex Hormones
Oestrogen promotes the normal development of a woman's **breasts** and **uterus** and controls the cycle of **ovulation,** and affects many aspects of a woman's physical and emotional health.
Progesterone controls **menstruation** and prepares the lining of the uterus to receive the fertilized egg.

Types of menopause:

Early menopause
Early menopause is defined as having the final period between the ages of 40 to 45.

Late menopause
Late menopause is a woman's last period occurring between the ages of 55 to 60.

Premature menopause/Premature ovarian failure/Induced menopause
This is a situation where a woman's ovaries stop working at a very early age, ranging anywhere from the age of puberty to age 40.
Premature menopause is not considered to be due to the normal effects of aging.
Some known causes of premature menopause include:

1. Surgical removal of both ovaries because of an abnormality in their structure and function before the age of natural menopause.
2. In hysterectomy, induced menopause occurs if the nerves and blood supply are damaged.
3. **Autoimmune disorders**, **thyroid** disease, **diabetes mellitus**, **chemotherapy**, and **radiotherapy**.
   However, in the majority of spontaneous cases of premature ovarian failure, the cause is unknown.

Factors that Influence Age of Menopause:
Cigarette smoking –experience menopause one and half years earlier
Nutritional status –women with poor nutritional status experience early menopause.
Body fat –oestrogen production is influenced by body fat –thin women experience menopause earlier than obese women.
Hereditary –some studies have indicated that mothers and daughters tend to have menopause at the same age.
High altitude –women living in high altitude are more likely to experience early menopause.
Physiology of menopause
The transition to menopause is usually gradual.
It may take about 6 to 8 years. This transition period is known as the climacteric, during which the activities of the gonads, slow down and ultimately cease completely resulting in physical and psychological changes.
The climacteric period is divided into 3 phases known as the premenopausal, menopausal and post-menopausal phases. As the ovaries atrophy, the oestrogen levels fluctuate resulting in changes in the menstrual cycle. The menses become irregular, different in character and duration of the flow decreases.

Physical symptoms:
Ovulation ceases, and oestrogen levels drop, causing changes in oestrogen dependent tissues.
Low oestrogen levels affect the stability between the hypothalamus and the autonomic nervous system and this triggers what is called hot flushes experienced by 85% of menopausal women.

Hot flushes:

This is the most common symptom experienced by menopausal women.
A hot flush usually lasts about five minutes but some women experience a hot flush every 15 minutes.
These get worse in the late afternoon, when it is hot, after hot drinks, after hot or spicy food and when stressed.
They decrease after about two years.
Flushes also coincide with surges of Luteinizing Hormone (LH) resulting in reddening of the skin of the face, neck and chest along with a feeling of intense heat.
Increased sweating may also occur especially at night (night sweats).
Breast tissue atrophies and the vaginal lining become thin.

There is decreased vaginal mucous production, dryness of the vaginal mucous membrane leading to burning and itching as well as dyspareunia. The vaginal pH level increases as the doderlien's bacilli decrease.
Others may experience decrease in libido.
Osteoporosis may also occur. There is loss of quantity of bone tissue leading to increased fragility and postural changes. The women are prone to fractures.
Low levels of oestrogen also affect the cardiovascular system leading to coronary heart disease.
Other symptoms include fatigue, joint pains, and dizziness and heart palpitations.

Psychological symptoms:
These include insomnia, nervousness, irritability, memory loss, depression and mood changes.

Nursing care
You can help women to accept menopause as a natural and non-pathological process. They should advise women on measures to ease the transition.
Hot flushes: It is a good idea to dress in layers so you can take off or put on clothing as needed.
Advise the client to sit in front of a fan at home or at the office or she may have to sit outside the house where there is free flow of air
She should avoid hot drinks and spicy food and drink cold water.
Although hot flushes can occur during exercise, regular exercise can help beat flushes and relieve insomnia.
Low dosages of certain antidepressants can also help relieve hot flushes.
Night sweats
Wear light pyjamas.
Have a brief shower if you wake up drenched.

Sleep disturbances:
Half an hour's exercise every day will help insomnia as long as you do not exercise late in the afternoon or at night.
Avoid smoking, heavy meals, coffee and alcohol after 16.00 hours and do not work late.
Make sure your room is dark and cool.

Mood swings:
These can be a problem particularly for women with a history of premenstrual syndrome or post-natal depression. Hormonal therapy can help – mood swings are not the same as depression.

Dryness
Lubrication with water soluble jelly or oils and application of oestrogen creams can compensate for vaginal dryness and tightness making intercourse easier. Complete abstinence may lead to severe shrinkage of the vagina and introitus.
Women should be advised that continued sexual activity will assist in maintaining the sexual functioning of the vagina.

Forgetfulness:
The client should be assured that she is not alone if she is feeling absent minded. This too will pass. She should make sure she gets get enough sleep and exercise every day.
Relaxation techniques especially slow rhythmic breathing and avoidance of stress have shown to increase vasomotor control, alleviating the embarrassment and discomfort this sensation usually involves.
Eat a healthy diet to keep bones strong, maintain a healthy weight, get regular exercise and do not smoke.

Menopause is the permanent cessation of reproductive fertility occurring some time before the end of the natural lifespan which every woman should experience.
The duty of the health worker is to make these women understand the effects of menopause and how to deal with the symptoms such as hot flushes, insomnia and forgetfulness.

Self Assessment Questions

Match the following statements in Column A with those in column B

COLUMN A	COLUMN B
Types of menopause.	A. Psychological problem
Factors influencing age at menopause	B.6-8 years
Insomnia, nervousness, irritability, memory loss, depression and mood changes	C. High altitude
Transition to menopause	D.3
Hot flushes	E. Physical symptoms

Answers: 1 D, 2C, 3 E, 4 B, 5 A

3.6 Investigations and Procedures Related to Gynaecology and Gynaecological Nursing

Today you will learn on the different types of investigations and procedures carried out in gynaecological nursing. It is important for us to know these investigations and procedures before we actually start to care for these gynae clients/patients. The investigations assists the health care team to find out what the actual problem (diagnosis) that the client/patient may have whereas the procedures assist in either treatment or diagnosis of the problem.

Investigations Carried Out in Gynaecology

The investigations carried out in Gynaecology and Gynaecological nursing are as follows:

Hysterosalpingography

A radiological test using a media to test the fallopian tubes patency

Laparascopy

A small incision made to explore using a laparascope to visualize all organs of the abdomen and the ovaries in particular.

Culdoscopy

An endoscope is inserted via the vagina in the wall of the posterior fornix of the vagina to examine the visceral of the pelvic cavity for growths

Culdocentesis

Tapping, aspiration or draining of the pouch of Douglas to remove fluid or pus

Urine Specimen

- Gravindex – to detect pregnancy
- Mid Stream Urine- for culture and sensitivity
- Urinalysis- for urinary tract infection, sugar

High vaginal swab

- Patient is instructed not to wash the vaginal for 24hrs and Cusco's bivalve speculum is introduced• A sterile swab is inserted high in the vagina to collect vaginal secretion for culture and sensitivity to rule out chlamydial and gonococcal infections. Culture and sensitivity testing aids in the selection of appropriate antibiotics for treatment. Urethral and rectal secretions may also be cultured.

Shillers' Test

Test for superficial cancer especially of the vagina, cervix and uterus. The tissue is painted with iodine solution, and the cancer cells fail to stain deeply because they do not contain glycogen. The results will show a positive result. Biopsy is taken to confirm diagnosis.

Biopsy

Removal of tissue for pathological exam in the lab to aid in diagnosis

Colposcopy

Using an endoscope the vagina will be visualized for healthiness, patches as in thrush

Hysteroscopy

Visualizing of the uterus using an endoscope for any growths for example, fibroids

Tubalinsuflation

Visualizing of the uterus and using air (carbon dioxide) to inflate under pressure is put in to find out if fallopian tubes are patent

Cystoscopy

Visualizing the bladder to detect any abnormalities in the urinary bladder which can be infiltrated to the reproductive organs for any abnormal connection as in Vesicle Vaginal Fistula

Cytology Exam

Pap smear (**Papanicolous smear**) from the cervix or the vaginal wall or discharge to detect any cancer or microorganisms, this investigation is encouraged for women to prevent and detect early cancer.

Cone Biopsy

A small cone-shaped section of the cervix, that is aimed to be large enough to remove any abnormal cells, is taken for examination under a microscope by a pathologist.

Pyelography

An Intra Venous Pyelography- used for renal outline and function

Computed Tomography Scanning

Whole abdomen and pelvis visualized in one sitting after taking 600-800ml of a dilute contrast medium 1 hour prior to procedure• Patient scanned in supine position• Accurate in accessing local tumour invasion and enables accurate localization in biopsy• Diagnose pelvic masses and other extra genital abnormalities

MRI (Magnetic Resonance Imaging) Scan

This test is similar to a CT scan, but uses magnetism instead of x rays to build up cross-sectional pictures of the body.

Ultrasonography

Simple, non invasive, painless, safe procedure• Pelvis and lower abdomen are scanned longitudinally and transversely• Prior to procedure the bladder should be full procedure visualizes masses examination –ovarian tumour/fibroid

Blood Specimens

- Blood for Haemoglobin levels to detect anaemia
- Blood for Rapid Plasma Reagent (RPR) and Venereal Disease Research Laboratory (VDRL) to detect sexually transmitted diseases such as syphilis.
- Erythrocyte segmentation Rate- which will be raised in infection

Procedures carried out in gynaecology and gynaecological nursing

- **Dilatation and curettage (D&C)**, the traditional method of removing tissue from the uterus, is accomplished by scraping the uterine walls with a metal curette. This is done in theatre under sterile technique. It's normally done in incomplete abortion to remove any retained products of conception. It can also be done for endometrium conditions like endometriosis and also in severe dysmenorrhoea
- **Manual Vacuum aspiration** uses suction to remove uterine tissue through a cannula with minimal scraping of the uterine walls. Vacuum aspiration, which has been used for more than two decades in industrialized countries, may be performed using suction provided by an electric or foot pump or a specially designed syringe
- **Breast examination**

  Breast Self-Exam Stand up and place one hand behind head. Hold the fingers of the other hand flat. Gently touch every part of the breast below the raised arm. Feel for lumps, bumps, or thickening. Now do the other breast. Stand in front of a mirror. Place hands on hips. Inspect each breast for changes in size, shape, and form. Do it again with arms raised above the head In front of the mirror

Diagram illustrating how to examine the breast while standing.

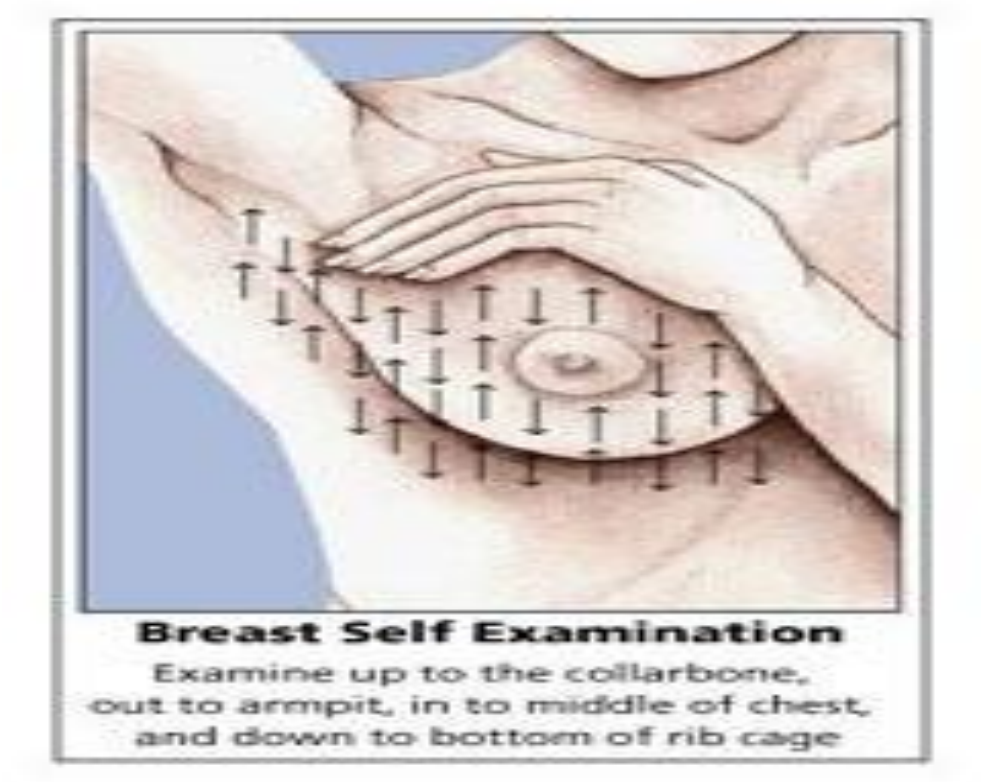

Figure 14: Brest Examination

Or Lie back with a pillow or folded towel under right shoulder. Place right hand behind the head. Examine every part of the breast with the fingers of the left hand held flat. Gently press in small circles. Start at the top outermost edge and spiral in to the nipple. Feel for lumps, bumps, or thickening. Now do the other breast. Be sure to follow a consistent pattern.

Diagram illustrating how to examine the breast while lying down

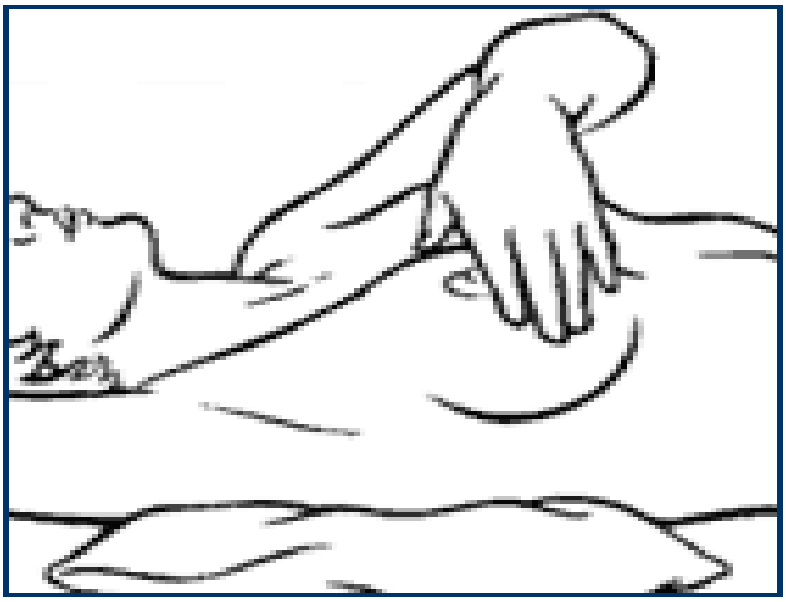

Figure 15: how to examine the breast while lying down

- **Vaginal examination**
  Position patient in dorsal position with legs abducted or can be placed in lateral position.
- Wash hands carefully, open the pack, prepare equipment and then put on sterile gloves
- Standing on the patient's right hand side, begin by inspecting the vulva and perineum
- Pick up the swabs with the right hand (the sterile hand) and now using the left hand, swab the labia majora from top down, once and discard the swab. Repeat on the other side. Then carry out the same manoeuvre for the labia minora. Finally separate the labia with the left hand and swab down once using a large swab in the right hand
- Lubricate the examining (2) fingers with obstetric cream and gently pass them into the vagina in an upward downward and backward movement without contaminating them. Direct the fingers along the anterior wall and note the degree of warmth and moisture
- Move your fingers behind the cervix – in the posterior fornix and anteriorly into the right fornix. Move again to the posterior fornix and feel posteriorly to assess the pelvic ligaments and the rectum. Remove your hand.
- During the examination encourage the patient to relax her muscles thoroughly and continue to breathe normally but with her mouth open.

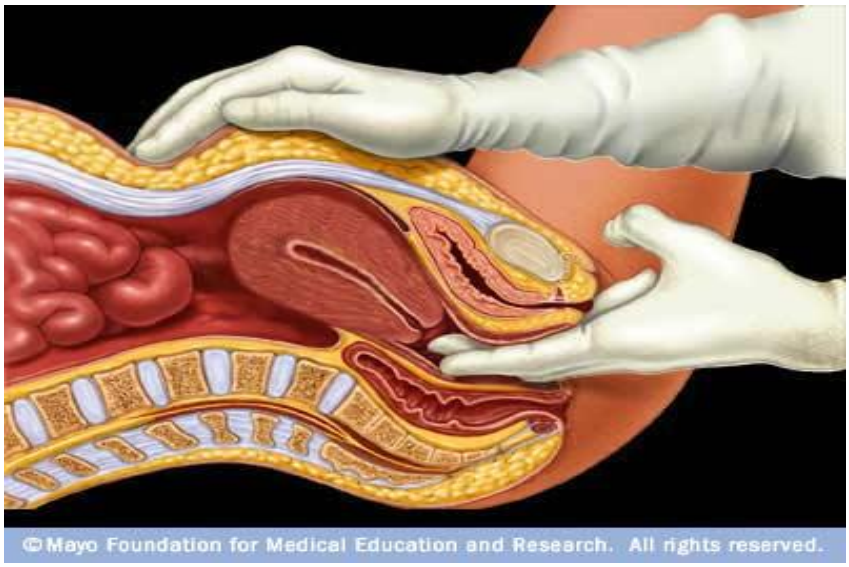

Figure 16: Diagram showing vaginal examination

- **Vaginal swab**
- Low vaginal swabs come from the lower vagina and can be done "blind" that is, without
- A speculum. Useful for thrush screening in pregnancy but not for Pelvic Inflammatory Diseases.
- High vaginal swabs come from the fornices. Useful for gonorrhoea testing.
- Cervical swabs come from the endocervical canal. This is where to take Chlamydia samples from.
- Open the swab packet and without touching anything else insert the swab stick to the appropriate depth and rotate / wipe it to collect secretions. Place into the appropriate tube and seal and label.
- For cervical swabs – if there is a lot of discharge this should be wiped out of the way first. Insert the swab into the cervix and rotate.
- **Pubic and perineal hygiene**

Basically, the perineal area refers to the region between your legs from your pubic bone to your anus. It is often one of the most overlooked areas of our body, unless you have a problem or you're having a baby.

One of the first steps to caring for your perineal region is hygiene. Air flow to this area is minimized because of extra surrounding tissue. The added weight also contributes to sweating which promotes bacteria and yeast formation. Washing every day with a mild soap and water will discourage this.

Because of the increased sweating it's very important to change wet underwear as soon as you get the chance. Sitting in wet panties is an invitation for skin breakdown, irritation and bacterial/yeast growth. You may need to change them a few times a day if you're a heavy sweater.

These areas need a break from being moist. Hair on the perineal area can be blown using a hair dryer to keep the hair dry, the skin along the pantie line, and between the skin fold up past your anus. If you are home you might also do this during the day between underwear changes. Perineal care is given at prescribed intervals and after urination and defecation.

- Pubic hair can be elimination for many different reasons. The reasons could be hygiene, aesthetics, tradition, and a result of religious practices or due to sexual preference

- **Sitz baths**

  A **sitz bath** or **hip bath** is a bath in which a person sits in water up to the hips. It is used to relieve discomfort and pain in the lower part of the body, for example, due to haemorrhoids (piles), anal fissures, rectal surgery, an episiotomy, uterine cramps, inflammatory bowel disease, and infections of the bladder, prostate or vagina. It works by keeping the affected area clean and increasing the flow of blood to it.

  A sitz bath may be created simply by filling a bathtub with some water and sitting in it for a few minutes. Alternatively, a large basin can be used. There are also special devices that fit into toilet bowls. Sitz baths may either be warm or cool. Some people find alternating between hot and cold water soothing. Sitz baths may be filled with just water, or substances such as salt, baking soda or vinegar can be added.

Insertion and removal of vaginal pack

Purpose

- Emergency treatment for excessive bleeding per vagina, which can occur following cone biopsy, laser to cervix or trauma to lower genital tract.
- Have equipment for repacking available at bedside if there is a possibility of further bleeding.

Equipment

- Vaginal examination tray (from Delivery Suite)
- Sims speculum
- Bi-valve speculum
- Scissors
- Sponge holding forceps
- Gauze packs
- Obstetric cream
- Warm normal saline
- Sterile gloves
- Angle poise light
- Cotton wool

Procedure

- Ensure privacy
- Explain procedure to patient and reassure. Give adequate analgesic cover.
- Ensure patient's bladder is empty. (Catheterise if necessary).

- Assist Medical Officer with insertion.
- Leave patient dry, warm and comfortable.
- Decontaminate equipment.

Removal of Vaginal Pack
Vaginal gauze packing is removed post-operatively as ordered by Medical Officer.
Check number of packs inserted on operation count sheet MR 325.

Equipment
Disposable gloves
Swab tray
Sterile sponge holding forceps
Swabbing solution
Incontinence pad
Angle poise light

Procedure
Explain procedure to patient.
Offer bedpan; remove all but one pillow; place patient in dorsal position and turn bedclothes down.
Position angle poise light.
Remove perineal pad.
Wash hands. Don gloves.
Clean labia; remove vaginal gauze with sponge forceps by gently drawing visible end toward the perineum with downward and forward movement. If gauze is adhering to tissues, moisten with solution. Care must be taken withdrawing knotted strips. On completion, vulval area is cleansed again and a fresh perineal pad applied.
Leave the patient comfortable.
Record removal on nursing observation chart and inpatient progress notes.
Check and sign for number of packs against number inserted in Operating Theatre as for operation record sheet. Report any discrepancy.
Check pad for excessive bleeding hourly for four hours.
Patient to remain in bed for one to two hours after removal of pack

If it is necessary for vagina to be repacked, additional sterile equipment should be available such as:-
• Vaginal speculum
• Sponge holding forceps
• Vaginal packing forceps
• Rolled gauze
• Gauze swabs
• Scissors

Figure 17: Diagram showing types of speculum

- **Insertion of pessaries, tablet and vaginal ointment**

Pessaries are solid, bullet-shaped preparations designed for easy insertion into the vagina. They can be inserted using your fingers, or may come with an applicator. Pessaries are normally made of a solid vegetable oil that contains the medicine. The medicine is gradually released into the vagina as the pessary dissolves at body temperature.

How to insert a pessary, tablets and vaginal ointment

Pelvic examination
Aim

- To assess the pelvic organs.

Technique
Don gloves, and lubricates the first 2 fingers of your right hand (your "pelvic" hand).

Part the labia with the fingers of the left hand and insert your first 2 fingers into the vagina. Gentle posterior pressure helps to get past the pelvic floor muscles.

Insert your fingers until you feel the cervix

Feel the cervix itself. Rock it gently from side to side.

Explain to the patient that while this isn't comfortable, it isn't usually painful. Ask if she has pain. If so, this is called cervical motion tenderness.

Place your left hand (your "abdominal" hand) on the lower abdomen and push in with the flat surface of your hand. At the same time move your pelvic hand so your fingers are behind the cervix – in the posterior fornix. Lift the cervix forwards with your pelvic hand while pushing down with your abdominal hand. You should be able to feel the body of the uterus between your hands. Slide your pelvic hand off the cervix into the right fornix. At the same time slide your abdominal hand into the right iliac fossa. Attempt to palpate the right adnexae. Repeat this procedure for the left side. Move again to the posterior fornix and feel posteriorly to assess the pelvic ligaments and the rectum. Remove your hand.

What to feel for

- The vaginal tissues – are there any masses in the vaginal walls.
- The pelvic floor muscles – are they overly tender or too lax?
- The cervix – its position, the shape and size of the os (if you can get a finger through the internal os it is said to be open), it is consistency and the nature of the surface (smooth is normal).
- The uterus – its position, size, shape, tenderness, mobility.
- The adnexae – any masses, or tenderness. If a mass is present describe it – size, shape, mobility among others.
- The pelvic ligaments – any nodularity or tenderness. Any masses in the rectovaginal septum?

Perineal exercises

- The pelvic muscles are contracted hard in the way of holding in urine or a bowel motion. The contraction is held for some time and then relaxed. This exercise should be repeated as often as possible throughout the day. It tones the pelvic muscles, preventing uterine prolapse and stress incontinence.

SELF ASSESSMENT TEST

1. Which of the following is not an investigation done in gynaecology and gynaecological nursing:

    a. Laparascopy

    b. Culdoscopy

    c. Chest Xray

    d. Ultrasonography

2. Only 2 of the following are gynaecological nursing procedures. Which ones are they?

    a. Vaginal Swab

    b. Sitz baths

    c. Tepid sponging

    d. Nail care

Answers

1. C, 2. A & B

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3.7 management of the client with gynaecological disorders

Disorders of menstruation

Next we shall look at the menstrual disorders and these are as follows:

1. Ammenorrhoea

This is the absence of menstruation. It may be classified as follows:

a) Apparent or Crypto-menorrhoea
b) Primary amenorrhoea
c) Secondary amenorrhoea
Management is broken down as follows;

- **Apparent/Cryptomenorrhoea**

This is a concealed type of menstruation and this is not a true type of ammenorrhoea because menstruation occurs but there is obstruction in the vagina which may be due to imperforate hymen or vaginal atresia.

Management

Surgical intervention for removal of obstruction

- **Primary Amenorrhoea**

Menstruation that has never occurred because of various causes such as:-

i. Glandular Disorder-Pituitary function which could manifest itself in the absence of Hair, and Adrenal dysfunction.
ii. Developmental abnormalities

Failure of the uterus, vagina and ovaries to develop

There could be absence of uterus and vagina but with normal ovarian function or there could be no ovaries at all.

- **Secondary Amenorrhoea**

Menstruation occurs thereafter ceases after it has been established for months or years hence it is a symptom or sign and not a disease.

Causes

1. Physiological Causes- Pregnancy, Lactation, Menopause, and artificially induced like stoppage of contraceptives.
2. Emotional Factors-Any disturbance between the hypothalamus and pituitary areas affects the physiology of menses, -Changes in the environment either occupation or climate
3. Glandular dysfunction-Adrenal Glands if there is over secretion of hormones, Thyroid Gland as in hyperthyroidism, Ovaries for instance if there is a tumour.
4. Systemic disorders-Chronic conditions like Pulmonary Tuberculosis, Severe Anaemia, Malnutrition and after use of oestrogens or progesterone.

Investigations

i. History of the condition general and pelvic examination
ii. Endocrine function test
iii. Treatment directed at the cause, in some cases treatment depends whether fertility is wanted or not.

2. Oligoamenorrhoea

This is infrequent (or, in occasional usage, very light) menstruation characterized by long intervals between menses, generally longer than 35 days. Oligomenorrhoea is common at the beginning and end of menstruation

3. Menorrhagia- excessive or prolonged menstrual bleeding.

Menorrhagia is a symptom.

Causes

- Lesions of the body of the uterus like fibroids, endometriosis,T.B
- Lesions of the cervix like Cancer of the cervix
- Lesions of the ovaries like oestrogen secreting tumours and Chronic infection
- Complications of pregnancy like abortion, ectopic pregnancy, hydatidform mole and chorion cancer

Treatment

- Treat the cause; anaemia as in diet rich in iron, myomectomy is done for fibroids. Dilatation and curettage though it is being discouraged. Foreign bodies in the uterus like inter uterine contraceptives for example loop. Are removed

4. Metrorrhagia- irregular bleeding or bleeding between menses.

5. Dysmenorrhoea

This is painful menstruation. It occurs in three forms.

- **Primary/Spasmodic or Intrinsic**

This is experienced before or during the first hours or days of menstruation. It may be continuous or spasmodic or colicky accompanied by vomiting, sweating, fainting, headache and malaise. Pain is felt in the pelvis and the lower back then radiates in to the legs. Relief may be experienced after the birth of the first child.

Causes

The actual mechanism is uncertain but other factors contribute to the condition like

- Obstruction of the flow to the uterus by a narrows cervical OS.
  Stronger uterine contraction

- Vasoconstriction of the terminal arterioles and ischaemia proceeds the shedding of the endometrium. The spasms produce uterine pain.

i. Maintain general good health, good bowel habits, hot water bottle
ii. Analgesics like panadols, codein and asprin
iii. Moderate activities encouraged to relieve pain.
iv. Hormones like oestrogen and progesterone (pill).
v. Dilatation and curratage is done

- **Secondary/congestive/Acquired Dysmenorrhoea**
  This develops after years of pain free menstruation usually due to secondary pelvic infections with a dull aching pain in the lower abdomen. Days before menstruation flow starts or may persist throughout menstruation.

Treatment depends on the cause.

- **Membranous Dysmenorrhoea**

This is very uncommon. It happens when the whole large part of endometrium are shed in pieces at menstruation.

Treatment is to use hormones like oestrogen in form of contraception.

- Hypermemerrhoea which is associated with clots which may lodge in the cervical canal causing pain
  Treatment

6. Menopausal Problems

Menopause is the transition period in a woman's life when her ovaries stop producing eggs, her body produces less estrogen and progesterone, and menstruation becomes less frequent, eventually stopping altogether

- The average age of menopause is 45-50 years.
- During menopause, there is a decline in oestrogen.
- The decline in oestrogen levels leads to atrophy of the organs of the genital tract and breasts, blood supply reduces increasing relaxation of muscles and uterovaginal prolapse may become evident. The labia majora lose their fat revealing the labia minor.

Symptoms

They result from low oestrogen and these include

- Hot flushes,
- sweating,
- insomnia,
- fatigue
- burning sensation in the vagina
- Dryness of the vagina
- Dyspareunia

Others include

- Active painful joints
- Headaches, palpitations Dizziness
- Irritability
- Anxiety
- Depression
- Lack of concentration
- Ischemic heart disease
- Osteoporosis

MANAGEMENT

- Psychological care
- Advise on nutrition and diet ·
- Exercises
- Hormonal therapy (oestrogen)

Alternative methods of management include

- Berllergal-S tablets, composed of phenobarbitonal,
- Ergotamines tartate and belladonna may eliminate or significantly reduce symptoms related to autonomic nervous system activity.

- Vitamin E relieves hot flushes, leg cramps and loss of energy.

Self Assessment Test

Fill in the blank spaces provided

1. ..... is the absence of menses by 16 years of age in girls who have never menstruated.

2..... is the absence of menstruation for 3 or more months in women with past menses.

3. Infrequent periods and bleeding that may occur at intervals greater than 45 days is called ……..

4. Menstrual blood loss exceeding the normal is termed as…….

5. Dysmenorrheal is classified as ……and …….

6. During menopause there is a decline in the hormone…….....

Answers

1. Primary amenorrhea

2. Secondary amenorrhea

3. Oligomenorrhoea

4. Menorrhagia

5. Primary dysmenorrhoea and secondary dysmenorrhoea

6. Oestrogen

3.8 Pre and Post Operative Care of Patient Undergoing Gynaecological Operations

Types of Operations
Gynaecological Operations can either be minor or major.
Normally the patient is admitted before surgical operation if it is not an emergency.

Psychological Care
Establish privacy and explain the condition to the patient. The patient can be referred to the Doctor responsible for details of the operation. Involve the family members too. Explain also when the patient will be operated on, making sure you have a listening ear.
Reassure also that strong analgesics are given for pain.
For operations such as hysterectomy upsets the woman/couple in terms of sexual life hence important to reassure them that they will still enjoy their sexual life.

Consent
Consent is obtained after clear explanation.

Diet

For minor operations, Patient is allowed to eat a full light diet if local anaesthesia for minor operation. For Major operations, No food is given 6-8 hours before aesthetic drugs. The patient should drink 2 litres of fluid in 24hours as patient has to be well hydrated and helps to prevent post-operative thrombosis and shock.

Content

Medication

Vitamin C is given to promote wound healing, Ferrous Sulphate Tablets are given to maintain the Hb.If there is infection, and antibiotics are given to clean off bacteria.

Exercises

Breathing exercises are taught to prevent post-operative complications, leg movement are encouraged to prevent deep vein thrombosis.

Local Care

If there is infection, local infection is treated before surgery. For infection prevention, trimming of hair from umbilical level to pubic region is done

Minor operations

1. Dilatation and curatage
2. Culdoscopy
3. Hymenectomy for rigid hymen
4. Construction of Artificial Vagina
5. Excision of Condylomata Acuminata
6. Excision of Cysts and Batholin Glands

Major Operations

1. Vaginal Hysterectomy
2. Vaginal cyst-Dissection
3. Fistulae of various types

Major Abdominal operations

4. Hysterectomy

Preoperative Care

Examination and investigation

Routine examination is done after which the patient is let to rest to alley anxieties.

- Clinical exam is done and this involves history especially of recent illness, date of last normal Monthly period to rule out pregnancy. Any female is considered pregnant until proven.
- General examination from head to toe is done, Vital signs are taken (TPR, BP nad weight), and examination of the abdomen and pelvic organs, Vaginal examination is also done. Legs are inspected for varicose veins.
  (Note if the patient is on any drugs especially hormones like contraceptives)

Investigations

a. Hb Estimation, Blood Grouping and X-Match
b. Abdominal X-Ray, U/S Scan
c. Cervical Smear
d. High vaginal Swab if there is Discharge from the Vagina.
e. Mid-Stream specimen of urine especially in Urinary tract infections
f. Urinalysis.

Morning of Operation
Food is withheld at least 6-8hrs before operation for elective operations, patient is bathed, baseline observations are done. If any dentures are removed to prevent airway blockage when under anaesthesia, wedding rings, necklines, they are also removed and kept safe.
Lipstick, nail vanish are removed for easy observation of any cyanosis.
The bladder is emptied and patient catheterised.
Premedication like atropin, is given 30-60min before operation.
All details are recorded.ID Band is put, all reports of investigations are put in the file and the patient is transferred to theatre and handover is given to the receiving nurse.
Prepare for a post-operative bed.

Post-Operative Care

Immediate Care
Patient in managed in the recovery room while she is still under effects of anaesthesia with strict observations of vitals and bleeding till stable and awake.
Carry post-operative tray to collect the patient from theatre.
-Check the patients' response to stimuli
-Check for respirations of the patient, see if airway is patent.
-Check for cannula site
-check for the wound operation site,
- check all the drains and whether they are functioning,
-check if there is a vaginal pack and vaginal loss.
-Get the handover and take patient to the ward after making sure that the patient is awake and stable vitals

Management In the ward
Put the patient in a clean bed and in lateral position.

Objectives
-To relieve pain
-To recognise complications
-To enhance rest
Give prescribed medication like analgesics to promote rest, normally pethidine 100mg qid IM .Antibiotics are given because the To relieve pain
-To recognise complications
-To enhance rest
Give prescribed medication like analgesics to promote rest, normally pethidine 100mg qid IM .Antibiotics are given because the patient is prone to infection.
Patient is nilling orally but continues on IV therapy if prescribed.
Sannitary pads are changed 6hrly, also depending on flow
Urine bag is emptied 6hrly.
When fully conscious, patient can be on one pillow but in lateral position.

Observations
-Vitals are done 2hourly and according to the condition if stable time interval is increased to 4hrly checks
-skin colour is observed to rule out cyanosis,
- The wound is observed for signs and symptoms of bleeding and haematoma
-Maintain strict intake and out put
- The pad is observed for blood loss and if bleeding is excessive, reinforce dressing and inform theatre staff.
-Check the legs for oedema and, any abdominal distension
-Observe for any pain
-Observe for bowel sounds and elimination.

Nutrition
Patient is maintained on I.V. if prescribed 2-3 lts/24 hrs, then sips after establishing
Bowel sounds, increasing to semi solid to solid foods by day 4.
Exercise
The first day post operatively, sit up the patient. Encourage to do passive exercises like moving legs in bed or out of bed. Encourage deep breathing exercises to prevent pneumonia.
Assist the patient in doing activities weaning her slowly till independent
Elimination
Micturition is established within 12-24hrs maintaining strict intake and output chart. Report any passage of urine to the Doctor.
Patient must pass flatus and bowel sounds should be heard
Hygiene
Bed bath is given first day post op. Mouth care is done, bed linen changed PRN
Vulva care is done 8hrly washing the groin and perineal area with mild soap using warm water. Clean pads given to be changed whenever soiled
Wound care
Clean wound daily, remove sutures 6- 7th day post-operatively.

Pre Discharge Education

- Vulva hygiene to prevent infection
- Diet should be balanced, frequent and small
- Rest should be continued, and exercise
- Should do her daily activities regularly
- Avoid heavy loads and standing for a long time if had major surgery
- Abstain for at least 4 weeks for healing.

3.9 Drugs Used in Gynaecology

Welcome to lesson 3.7. Under this section we will discuss the drugs used in gynaecology nursing. You will learn more about these drugs in the other course called pharmacology. The drugs will be grouped into the various categories they belong to.

Some important drugs used in gynaecology are as follows:

- Prostaglandins and Oxytocics
- Mifepristone
- Myometrial relaxants
- Opioid analgesics – Pethidine (Controlled drug)
- Magnesium Sulphate ($MgSO_4$)
- Calcium gluconate

Next we are going to discuss the important mentioned drugs used in gynaecology as follows;

Prostaglandins and Oxytocics

Prostaglandins and oxytocics are used to induce abortion or induce or augment labour and to minimise blood loss from the placental site. They include

a. Oxytocin
b. Ergometrine
c. Prostaglandins

Oxytocin

Oxytocin is a peptide hormone of the posterior pituitary gland. It stimulates the contractions of the pregnant uterus, which becomes much more sensitive to it at term.

Oxytocin is reflexly released from the pituitary following suckling [and manual stimulation] and causes almost immediate contraction of the myoepithelium of the breast; it can be used to enhance milk ejection [nasal spray]. The only other clinically important effect is on the blood pressure which may fall if an overdose is given.

Synthetic oxytocin [Syntometrine®] is pure and is not contaminated with vasopressin as is the natural product, which is obsolete

Indications

1. induction for medical reasons or stimulation of labour in hypotonic uterine inertia
2. Prevention of post partumhaemorrhage, after delivery of placenta.
3. Treatment of post partumhaemorrhage.
4. Incomplete, inevitable or missed abortion

Contraindications

- Hypertonic uterine contraction
- Mechanical obstruction to delivery
- Fetal distress
- Any condition where spontaneous labour or vaginal delivery is inadvisable (for example, significant cephalopelvic disproportion, malpresentation, placenta preavia, vasa preavia placental abruption, cord presentation or prolapse, predisposition to uterine rupture as in multiple pregnancy, polyhydramnios, grand multiparity and presence of uterine scar from major surgery- including caesarean section .
- Avoid prolonged administration in oxytocin-resistant uterine inertia, severe pre-eclamptictoxeamia or severe cardiovascular disease.

Side effects

- Uterine spasm (may occur at low doses)
- Uterine hyper stimulation (with excessive doses- may cause fetal distress, asphyxia and death, or may lead to hyper tonicity, titanic contractions, soft tissue damage or uterine rupture
- Water intoxication and hyponaetreamia associated with high doses with large infusion volumes of electrolyte- free fluid
- Nausea, vomiting, arrhythmias.
- Rashes and anaphylactoid reactions(with dyspnoea, hypotension or shock)
- Placental abruption and amniotic fluid embolism also reported on overdose.

Dose

a) Induction of labour for medical reasons or stimulation of labour in hypotonic Uterine inertia;

- By intravenous infusion, initially 0.001 – 002units/minute increased at intervals of at least 30 minutes until a maximum of 3 – 4 contractions occur every 10 minutes [0.012 units/minute is often adequate]

NICE in UK recommends that;

Oxytocin should be used in standard dilutions of 10 units/500ml [Infusion

3ml/hour delivers 0.001 unit/minute] or for higher doses, 30 units/500ml [infusing

1ml/hour delivers 0.001 units/minute]

Important: careful monitoring of fetal heart rate and uterine motility essential for dose titration(never give intravenous bolus injection during labour); discontinue immediately in uterine hyperactivity or fetal distress.

b) Prevention of post partumhaemorrhage, after delivery of placenta;
By slow I.V injection, 5 units (if infusion used for induction or enhancement of labour, increase rate during third stage and for the next few hours).

c) Treatment of post partumhaemorrhage ;
By slow IV injection, 5 – 10 units followed in severe cases by IV infusion of

5 – 30 units in 500ml infusion at a rate sufficient to control uterine atony

d) Incomplete, inevitable, or missed abortion, by slow IV Infusion, 0.02 – 0.04 units/minute or faster.
e) Caesarean section, by slow iv injection immediately after delivery, 5units.

Ergometrine

Ergometrine and Oxytocin differ in their actions on the uterus. In moderate doses, oxytocin produces slow generalised contractions with full relaxation in between; Ergometrine produces faster contractions superimposed on tonic contractions.

Thus, oxytocin is more suited in induction of labour and ergometrine to the prevention and treatment of post partumhaemorrhage.

Indication

- Prevention and treatment of haemorrhage

Contraindication

- Induction of labour, first and second stage of labour
- Vascular disease
- Severe cardiac disease
- Impaired pulmonary function
- Severe hepatic and renal impairment,
- Sepsis
- Severe hypertension, eclampsia.

Side Effects

a. Nausea, vomiting, headache, dizziness, tinnitus,
b. chest pain, Palpitation, Dyspnoea, bradycardia
c. Transient hypertension, vasoconstriction, stroke, myocardial infarction and pulmonary oedema also reported

Dosage

Ergometrine may be given;

a. Orally – 0.5 – 1mg, when action begins in about 8 minutes and last about 1 hour.
b. Intravenously – 100 – 500 micrograms [µg]; onset of action about 1 minute used as treatment of established post partumhaemorrhage.

c. Intramuscularly – 200 - 500µg; action begins in about 6 minutes; the onset is speeded by mixing the injection with hyaluronidase [1500], which enhances tissue permeation and so speeds absorption.

Prostaglandins

Prostaglandins that soften the uterine cervix [by an action on collagen] and have a powerful oxytocic effect include;

- Carboprost
- Dinoprostone
- Gemeprost

a. Dinoprostone

Indication

They are used to induce labour and to terminate pregnancy, including missed or partial abortion and in the treatment of hydatiform mole;

Contraindications

- Active cardiac, pulmonary, renal or hepatic disease
- Placenta praevia or unexplained vaginal bleeding during pregnancy, ruptured membranes
- Fetal malpresentation
- History of caesarean section or major uterine surgery
- Untreated pelvic infection
- Fetal distress
- Grand multiparas and multiple pregnancy

Side Effects

- Nausea, vomiting, diarrhoea;
- Uterine hypertonus
- Severe uterine contractions
- Pulmonary or amniotic fluid embolism
- Abruption placenta
- Fetal distress
- Maternal hypertension
- Bronchospasm, among others

Dose

By vagina, cervical ripening and induction of labour at term, 1 pessary inserted high into posterior fornix; if cervical ripening insufficient, remove pessary 8 - 12 hours later and replace with a second pessary [which should also be removed not more than 12 hours later]; max. 2 consecutive pessaries.

By mouth, induction of labour, 500 micrograms, followed by 0.5 – 1mg [max. 1.5mg] at hourly intervals. Intravenous solution, for dilution and use as an infusion, dinoprostone 1mg/ml

b. **Carboprost**

Indications

- Postpartum haemorrhage due to uterine atony in patients unresponsive to ergometrine and oxytocin.

Contraindications

- Untreated pelvic infections
- Cardiac, renal, pulmonary, or hepatic disease.

Side effects

- Nausea, vomiting and diarrhoea
- Hyperthermia and flushing,
- Bronchospasm

Dose

By deep intramuscular injection 250 micrograms repeated if necessary at intervals of $1^1/_2$ hours. Total dose should not exceed 2mg [8 doses]

c. **Misoprostol [Cytotec®]** – is given by mouth or by vaginal administration to induce medical abortion [unlicensed indication]; intravaginal use ripens the cervix before surgical abortion
d. **Gemeprost** – is used intravaginally to soften the cervix before operative procedures in the first trimester of pregnancy and for abortion alone and in combination with an antiprogestogen [Mifeprostone]

Antiprogestogens

Mifeprostone

Mifepristone, an antiprogestogen steroid used for the termination of pregnancy. For medical termination it is given in combination with gemeprost; it is also used for softening and dilating the cervix before surgical termination. Although the licensed dose of mifepristone is 600mg, there is evidence that lower doses are effective for medical abortion in pregnancy of up to 20 weeks gestation

Contraindication

- Suspected ectopic pregnancy
- Chronic adrenal failure
- Long term corticosteroid therapy
- Haemorrhagic disorders and anticoagulant therapy
- smoking

Dose

Medical termination of intra uterine pregnancy up to 63 days of gestation, by mouth, Mifepristone 600mg as a single dose in presence of doctor and observed for at least 2 hours followed 36 – 48 hours later [unless abortion already complete] by Gemeprost 1mg by vagina and observed for at least 6 hours with follow up visit 8 – 12 days later to verify complete expulsion

Myometrial Relaxant

B_2 agonists relax uterine muscle and are used in selected cases to inhibit premature delivery.

B_2 agonists are indicated for the inhibition of uncomplicated premature labour between 24 and 33 weeks of gestation and they may permit a delay in delivery of at least 48 hours.

Examples

- Atosiban [oxytocin receptor antagonist]
- Ritoride Hydrochloride
- TerbutalineSulphate
- Salbutamol

Salbutamol

Indication

a. Uncomplicated premature labour
b. Asthma

Contraindications

a) Cardiac disease
b) Eclampsia and severe pre-eclampsia
c) Intra uterine fetal death
d) Ante partum haemorrhage [requires immediate delivery]
e) Placenta praevia
f) Cord compression

Side Effects

- Nausea, vomiting
- Tremor, hypokalemia, Tachycardia, Palpitations and hypotension
- Uterine bleeding
- Pulmonary oedema
- Chest pain or tightness
- Liver function abnormalities,

Dose

By intravenous infusion 10µg/min, rate increased gradually according to response at 10 minute intervals until contractions diminish the increase rate slowly until contractions cease [Max rate 45µg/min; maintain rate for 1 hour after contractions have stopped, then gradually reduce by 50% every 6 hours, then by mouth 4mg every 6 – 8 hours.

Opioid analgesics

Pethidine

Indication

- Moderate to severe pain
- Obstetric analgesia
- Peri-operative analgesia

Contraindications

- Avoid in acute respiratory depression, acute alcoholism and where risk of paralytic ileus;
- Also avoid in raised intracranial pressure or head injury
- Avoid injection in phaechromocytoma

SIDE EFFECTS

- Nausea and vomiting
- Constipation
- Drowsiness
- Large doses produce respiratory depression and hypotension

- difficult with micturition, ureteric or biliary spasm
- Dry mouth, sweating, headache, facial flushing, vertigo
- Decreased libido or potency
- hallucinations
- Dependence among others

DOSE

Obstetric analgesia, by subcutaneous or intramuscular injection, 50 – 100mg, repeated

1 – 3 hours later if necessary; max. 400mg in 24 hours.

Postoperative pain, by subcutaneous or intramuscular injection, 25 – 100mg, every 2-3 hours if necessary; CHILD, by intramuscular injection, 0.5-2mg/kg

MALARIA

Intermittent Presumptive Treatment (IPT)

In pregnancy give 3 doses (three tablets per dose) of sulphadoxine + pyrimethamine (Fansidar®) during the 2nd and 3rd trimesters, at least one month apart. However, fansidar should be avoided in the 1st trimester

Take Note
Quinine can be given for the treatment of malaria in all the three trimesters

Pregnant Women and HIV

HIV testing should be provided on an opt-out basis for all women presenting to their first antenatal clinic visit. Women who test negative at the first visit should be retested every 3 months at subsequent antenatal visits, when presenting in labour, and during the breastfeeding period (for example, at the 6 week postnatal visit)

- Diagnosing and treating pregnant women with ARV therapy to prevent transmitting the virus to the foetus is a priority.
- Pregnant, HIV positive women will either be offered
    - HAART to both prevent MTCT of HIV and treat maternal disease or
    - short-term ARV therapy to prevent mother-to-child transmission only

  HAART for PMTCT of HIV and Maternal Treatment of HIV
- HAART provides maternal treatment for pregnant women who are eligible
- HAART is also associated with the lowest rates of mother-to-child transmission (1-2%)

  What Do You Do If a Woman Becomes Pregnant While On HAART

I. **Woman on first line ART regimen**

Take Note:
all replacement recommendations assume the patient demonstrates no signs of treatment failure; if treatment failure then changes to appropriate second line regimen. For any situations that are not clear from the guidelines consult an HIV Specialist for advice.

- If she is taking any of the following nucleoside combinations (TDF/FTC or 3TC; ABC/3TC; AZT/3TC; d4T/3TC) with **EFV Continue if gestation age above 14 weeks**
- Replace EFV with NVP if gestation age is before 14 weeks with CD4 less than 35**0 cell/mm^3 (if CD4 between 250-350 increased risk** of hepatotoxicity and patients must be monitored for rash and liver toxicity very closely); may consider switching back to EFV after first trimester
    - If CD4 is greater than 350 cells/mm^3 then use LPV/r until pregnancy beyond 14 weeks and then switch back to EFV

- If she is taking **TDF/FTC or 3TC/NVP**
    - **Continue same regimen regardless of gestation age**
- If she is taking **ABC/3TC/NVP**
    - **Continue same regimen regardless of gestation age**
- If she is taking **d4T/3TC/NVP**
    - **Replace d4T with either TDF or ABC**
- If she is taking **AZT/3TC/NVP**
    - **Replace AZT with either TDF or ABC if signs of AZT toxicity**

II. Woman on second line ART regimen

In this situation the priority is to treat the mother and help prevent transmission of HIV to the unborn baby. In Zambia there are limited options of which drugs to switch to therefore it is recommended that the woman is maintained on the same 2nd line regimen.

- Consultation with an HIV Specialist is strongly recommended for these patients

What do you do if an HIV-infected woman becomes pregnant and is not on HAART?

- In this situation:
    - Patient should be clinically staged, according to WHO staging criteria
    - CD4 should be determined
    - The following are the two options

1. **HAART**
   Eligibility Criteria:
   - **CD4 is <350/mm^3 regardless of WHO clinical stage**
   - Stage 3 or 4 regardless of CD4 count

   ARV options:

   - Initiate HAART after 14 weeks of gestation age and completed treatment preparation

- **TDF/FTC or 3TC + EFV** or NVP
    - **ABC/3TC/EFV if calculated CrCl<50ml/min**
- If CD4 <250 Preference to use NVP instead of EFV

Note that:

- HAART should be continued during pregnancy, labour and after delivery (lifelong treatment)
- **Prophylaxis for Infants born to mothers on HAART**
    - For all exposed infants give daily NVP from birth until 6 weeks

2. Short Course ARV Regimens for PMTCT **should be given if:**
    - CD4 is >350 and patient is in WHO stages 1 or 2
    - Refer to the PMTCT guidelines for options of ARVs to be used
    - For short course ARV regimens for PMTCT, there is possible development of resistance with unknown effect on future maternal treatment or on infant treatment, if infected in spite of prophylaxis

Contraception

The process of contraception is achieved by preventing ovulation [oestrogens] and also by causing the thickening of cervical mucus [progestogens] which then impedes entry of the sperms into the uterus and interferes with implantation.

Contraceptives

a) Combined oral contraceptives
b) Progestogen-only contraceptives
c) Spermicidal contraceptives
d) Contraceptive devices

Combined Oral Contraceptives

Oral contraceptives containing oestrogen and a progestogen are the most effective preparations for general use.

Advantages;

a) Reliable and reversible
b) Reduced dysmenorrhoea and menorrhagia
c) Reduced incidence of premenstrual tension
d) Less symptomatic fibroids and functional ovaries cysts
e) Less benign breast disease
f) Reduced risk of ovarian and endometrial cancer
g) Reduced risk of pelvic inflammatory disease which may be a risk with intra uterine device

Example

Microgynon-30® [Levornogestrel 150µg/Ethinylestradiol 30 µg]

Indication

- Contraception
- Menstrual symptoms

Contraindications

- Pregnancy
- Personal history of venous of arterial thrombosis
- Heart disease associated with pulmonary hypertension or risk of embolus
- Migraine
- Liver disease
- Undiagnosed vaginal bleeding
- Breast feeding

Side effects

- Nausea, vomiting, headache
- Breast tenderness
- Changes in body weight
- Fluid retention
- Thrombosis
- Changes in libido
- Skin reactions
- Hypertension
- Impairment of liver function
- Reduced menstrual loss, 'spotting' in early cycles; Absence of withdrawal bleeding

Dose

Each tablet should be taken approximately same time each day; if delayed by longer than 12 hours contraceptive protection may be lost.

Progestogen-Only Contraceptives

a) Oral progestogen-only contraceptives
b) Parenteral
c) Intra uterine Progestogen-only contraceptive

Oral progestogen-only contraceptives

Oral progestogen-only preparations may offer a suitable alternative when oestrogens are contraindicated, but have a higher failure rate than combined preparations.

They are suitable for older women, for heavy smokers and for those with hypertension, valvular heart disease, diabetes mellitus and migraine.

Menstrual irregularities [Oligomenorrhoea, menorrhagia] are more common but tend to resolve on long term treatment

Examples; Norethisterone 350µg; Levornogestrel 30µg

Indications

- Contraception

Contraindication

- Pregnancy
- Undiagnosed vaginal bleeding
- Severe arterial disease
- Liver adenoma
- Porphyria
- After evacuation of hydatiform mole

Side Effects

- Menstrual irregularities
- Nausea, vomiting
- Headache
- Dizziness
- Breast discomfort
- Depression
- Skin disorders
- Disturbance of appetite
- Weight changes
- Changes in libido

Parenteral Progesteron-Only Contraceptives

For example, Medroxyprogesterone acetate [Depoprovera®] is a long acting progestogen given by intramuscular injection; it is as effective as the combined oral preparations but because of its prolonged action it should never be given without full counseling backed by the manufacturers approval leaflet.

Intra Uterine Progestogen Only Device

The progestogen-only intra uterine system, releases levornogestrel directly into the uterine cavity. It is licensed for use as a contraceptive and for the treatment of primary menorrhagia.

Emergency Contraceptives

Hormonal methods

Hormonal methods for contraception involve the use of either Levornogestrel or the combined preparation containing ethinyloestradiol with Levornogestrel. Both are effective if the first dose is taken within 72 hours [3 days] of unprotected sex; taking the first dose as soon as possible increases efficacy.

Levornogestrel is taken as 1 tablet of 750 micrograms followed 12 hours later [and no later than 16 hours] by a further tablet.

Advantages

- The levornogestrel-only emergence contraceptive is more effective than the combined hormonal emergence contraceptive.
- It has fewer side effects than the combined hormonal emergence contraceptive

The combined hormonal [Yuzpe] method involves taking 2 tablets, each containing ethinylestradiol 50 micrograms and levornogestrel 250 micrograms, followed 12 hours later by a further 2 tablets.

The combined method is not suitable for women with a history of

- thrombosis
- Active porphyria, or
- For those with focal migraine at the time of presentation.

Side Effects

- Nausea, vomiting
- Headache
- Dizziness
- Breast discomfort, and
- Menstrual irregularities

Interactions

The effectiveness of either hormonal method of emergence contraception is reduced by enzyme-inducing drugs for example Rifampicin, Nevirapine among others. The dose of emergence contraception should be increased by 50%. In the case of levornogestrel, the first dose is doubled to 1.5mg followed 12 hours later by the usual dose of 750 micrograms

Antibiotics

- Ampicillin
- Gentamycin
- Metronidazole
- Benzathine penicillins
- Cloxacillin
- Amoxicillin
- Cefaloxycine
- Cotrimazole vaginal pessary
- Erythromycin
- Ciprofloxacin
- Tetracycline or doxicycline
- Tetracycline 1% eye ointment

Miscellaneous

- Lignocaine
- Adrenaline 1:1000
- Vitamin K
- Vitamin A
- Diazepam
- Ringers lactate
- Paracetamol
- Gentian violet
- Iron/Folic acid
- Mebendazole
- SulphadoxinePyrimethamine
- Niverapine
- Zidovudine

- Lamivudine
- Tetanus toxoid
- Normal saline
- Glucose
- Water for injection

3.10 Abortions

An abortion is the termination of fetal growth before the 28th week of pregnancy. It is one of the leading causes of maternal mortality worldwide. In Zambia, 6 per 1000 women die of unsafe abortion and 70% of abortions end up in complications due to unsafe practices. It is estimated that 30% of 591 maternal deaths per 100 000 live births result from unsafe abortion (MoH, 2009).

Now let's look at the causes of abortion. **Causes of abortion**

The causes of abortion are divided into fetal and maternal causes

Fetal causes

- Chromosomal anomalies; the malformations and abnormalities of the chorion and faulty implantation.
- Multiple pregnancy also has an increased tendency to spontaneous abortions
- Fetal infections like Rubella.

Maternal causes

I. **Maternal infections:** Acute febrile illnesses like malaria, septicemia affecting the fetus or the placenta
II. **Maternal chronic condition:** tuberculosis, severe hypertension, anaemia, sickle cell disease, chronic renal disease, syphilis, hypothyroidism, hormonal imbalance, emotional stress
III. **Abnormalities of the generative organs** Sub mucus fibroid, displacement of the uterus for example retroversion or prolapse, incompetent cervix, congenital abnormalities of the uterus for example bicornuate uterus.
IV. **Other Causes like Noxious agents** for example chemicals, cytotoxic drugs, radiation may be embryotoxic, Accidents.
V. **Nutritional Deficiencies** such as Malnutrition, Lack of folic Acid.
VI. **Abdominal surgery:** trauma of surgery may induce an abortion for example during myomectomy, laparatomy

Types/classification of abortions

There are two (2) major classifications of abortion, that is, **Spontaneous** and **induced** abortion

Spontaneous Abortion

- Is the termination of pregnancy that occurs without external interference.

Spontaneous abortion is divided into the following;

- Threatened
- Missed
- Inevitable
- Habitual
- Complete
- Incomplete
- Septic

Threatened Abortion

It is a spontaneous type of abortion, in which a pregnant woman presents with slight bleeding through the un-dilated cervix

Clinical features

- Blood loss is scant, with or without lower abdominal pain and backache, cervix closed, uterus is soft and non tender

Management

Aim

To prevent abortion to become inevitable

Investigations

- Obtain history and do physical examination
- Ultra sound to determine viability

Treatment

- Bed rest is the most important form of treatment so that the woman has total physical and mental rest. The patient should remain in bed for 5-7days or for as long as blood is bright red. Bed rest increases blood flow to the placenta and reduces pain. Psychological care is given
- Medication; Give mild sedatives for example diazepam to enable patient rest in bed. If uterine contractions become stronger, analgesics such as pethidine 100mg intramuscularly or morphine 15mg may be needed. Ventoline tab 4mg tds will be given to relax the uterine muscles
- Observations; Pads should be saved in order to help assess the amount of blood loss. Soiled linen Report any increase in bleeding like clots and any abnormal tissue through the vagina. Observe for pain. Vital signs are done and recorded, do not perform any vaginal examination until the Doctor comes,
- Diet; should be light and none stimulating to prevent uterine contractions.
- Hygiene; Encourage Change of sanitary pads to prevent infection. Oral toilet and vulva swabbing are done.

Take Note

Urinalysis should be done to exclude urinary tract infections (cystitis) which stimulate these symptoms. Rule out ruptured ectopic, dysplasia, carcinoma, or polyp

Missed abortion:

This occurs when the fetus dies is retained in utero together with the placenta and membranes.

Clinical feature:

- No pain, uterus does not grow, breast soft, signs of pregnancy disappear, brownish vaginal discharge.

Management:

- uterine evacuation if pregnancy is less than 12 weeks
- , oxytocic infusion or vaginal insertion of oxytocics to expel the Products of Conception (POC).
- If in a clinic, Refer cases of missed abortion to hospital for surgical evacuation and checking of uterus may be necessary

Inevitable abortion:

An abortion is inevitable when the pregnancy can no longer continue. It may be complete or incomplete

Clinical features

- Progressive dilatation of the cervix
- Bleeding is heavier and severe,
- Abdominal pain is more severe with stronger Contractions, colicky in nature and situated in the supra pubic area
- mother may be distressed due to blood loss, pain and sense of loss

Management

- admit patient

- , explain to patient what is happening,
- do vital signs to rule out shock,
- administer oxytocin to control bleeding,
- surgical curretage may be indicated to remove retained POC
- check the Hb after 24 hrs

Incomplete abortion:
This is one in which part of the products of conception (placenta, membranes) are retained.
***Clinical picture*:**

- backache and abdominal pains which may be severe,
- PV bleeding,
- if bleeding is profuse there are signs of shock

Management

- Patient is admitted, resuscitated and 1 ltr of normal saline is commenced in addition with syntocinon or oxytocin 10 units to initiate contractions so that the products are expelled
- Monitor drops of oxytocin at 10 drops / minute then observe. After an hour, increase to 20 till 60 drops/minute is reached with increasing drops hourly.
- Collect blood for grouping and cross match.
- Evacuate uterus under anaesthesia or strong analgesia (D and C)
- Antibiotics only if febrile
- If patient is in shock start a plasma expander drip after taking blood for grouping and cross-matching
- Do a sterile vaginal examination and remove any placental tissue distending the cervix with a finger or sponge forceps
- Give oxytocin 10 i.u intramuscularly. Once these steps have been taken the condition usually improves and the patient can safely be transferred to hospital.

Complete Abortion
The term “complete abortion” signifies that all products of conception have been expelled.
Clinical picture

- Uterus becomes smaller on palpation
- On vaginal examination cervix is closed
- Patient usually notices expulsion of the tissue or even fetus and placenta
- Abdominal pain subsides
- Bleeding may stop or slows down considerably
- Treat any abortion as incomplete until an examination is done.

Management

- Rest in bed, if possible with sedation
- Evacuate uterus as soon as possible to ensure completeness
- Check Hb after 24hours
- Curettage only needed if bleeding persists

Habitual Abortion
A habitual abortion, a situation where there has been 3 or more consecutive abortions mainly due to congenital malformations of the uterus and an incompetent cervix. It might be interspersed with normal deliveries.

Management

-Admit the patient

-Investigations are done to find out the cause.

-If the cervical os is incompetent, shirodiker suture is inserted

-PV bleeding is observed

-Pain may be relieved by giving strong analgesics like pethidine

-Observations and vitals are done

-There should be no sexual inter course

-Complete bed rest is advised and high standards of hygiene.

Induced Abortion

- Is the termination of pregnancy that occurs due to external interference
- Induced abortion can be either Therapeutic or Criminal abortion

Therapeutic Abortion

Therapeutic abortion is an abortion which is performed by a trained medical Doctor for medical reasons.

.An abortion is considered to be therapeutic when it is performed to:

- to save the life of the pregnant woman
- to preserve the woman's physical or mental health
- to terminate pregnancy that would result in a child born with a congenital disorder that would be fatal or associated with significant morbidity
- To selectively reduce the number of fetuses to lessen health risks associated with multiple pregnancies.

Criminal Abortion
This is the termination of pregnancy by unauthorized person or it an abortion that is illegally done.

It is an offence and punishable by law. Criminal abortion can be complete or incomplete which predisposes to serious conditions such as sepsis (septic abortion), Kidney failure, perforation of the uterus, severe haemorrhage which can cause death.

Septic Abortion
Infection can complicate any type of abortion. If the infection is spread into the maternal systemic circulation it is usually called septic.

Illegal (criminal) abortion may be the cause of septic abortion, or retained products of conception. The risk to the patient is not only from the sepsis (unsterile instruments or environment) but also from possible associated injuries to the birth canal.

Clinical picture:

Anaemia, pyrexia, tachycardia, headache, offensive lochia, usually profuse, uterus is bulky and very tender.

Management

Infection of the uterus may follow any abortion especially an incomplete or induced abortion. This is usually caused by Gram negative E.coli, but sometimes Gram positive streptococci and staphylococci are involved.

- Treatment of these patients with septic abortion is an emergency as delay may result in severe complications or death
- Patients should be managed in the hospital if possible, however treatment should be instituted as soon the diagnosis is made

- Isolate the patient
- Resuscitate with intravenous fluids
- Give parenteral broad spectrum antibiotics
- Take a cervical swab for culture and sensitivity before starting antibiotic treatment
- Blood transfusion can be given in cases of low haemoglobin
- Most patients will have fluid deficit from blood loss during abortion or from poor fluid intake due to ill health or fever.
- Evacuation of the uterus should be instituted immediately resuscitation is complete and antibiotics started

Nursing care of patient following an abortion
The goals of nursing care are:

- To prevent shock
- To relieve pain
- To alley anxiety
- To provide post abortal counselling

Immediate Care

The following is the immediate care:

- Following post abortal care the woman is still at risk of bleeding and developing shock, therefore close observations should be made until discharge.
- Vital signs of temperature, pulse, Blood pressure will be done to rule out shock.
- Check for other signs shock like cold clammy skin, restlessness and feeble pulse
- Explain the prognosis of pain and give prescribed pain relief
- Observe the degree of bleeding by requesting the woman to keep the pads and show you. Note the content, consistency, colour and odour and amount
- Observe for pallor, dehydration and jaundice
- Note the degree of pain which may indicate presence of retained products
- Observe the woman's reaction to the loss interacting with her
- Promote rest by minimising disturbances and carrying out procedures collectively
- If on IV fluids maintain a fluid balance chart and note the intake and output to rule out hypovolaemic shock and renal failure

Hygiene/ Prevention of Infections

- Vulva hygiene is paramount in post abortion due to risk of ascending infection. Therefore vulva swabbing will be done frequently in acute phase and subsequently the woman will be encouraged to take baths and change pads frequently
- Change linen whenever soiled
- Ensure aseptic techniques are followed during all the procedures done on the client. Use clean and sterile equipment such as speculum, pads among others

Rest/ Activity

- Due to excessive loss of fluids and pain, the woman will be feeling week and tired, therefore rest should ensured until complete recovery
- Involve the partner or support person and explain the importance of rest during the recovery phase.
- Introduce exercises gradually as tolerated by the client

Post Abortal Counselling

- The main aim of counselling is to ensure that the client is availed with family planning services to prevent repeated abortions. This should be done to all women.

- Counselling should be done using profiling system and it can be done individually or in groups whilst upholding the patients confidentiality
- Patients should be referred appropriately to the next level of care if necessary
- Document all the information necessary.
- Involve the partner or support person and explain the importance of post abortal contraception

Information, Education and Communication

- During IEC, Involve the support person and commence from the known to the unknown
- Hygiene/Prevention of infection
- Nutrition
- Rest
- Family planning
- Sexual advice
- Review date

Complications

The complications of abortion include;

- infertility secondary to infection and healing by fibrosis which may block fallopian tubes
- anaemia due to severe bleeding
- dic
- peritonitis due to perforation of uterus and infection of the peritoneum
- septicaemia from infection

SELF ASSESSMENT TEST

Fill in the blank spaces provided

1. ..... is the absence of menses by 16 years of age in girls who have never menstruated.

2..... is the absence of menstruation for 3 or more months in women with past menses.

3. Infrequent periods and bleeding that may occur at intervals greater than 45 days is called ……...

4. Menstrual blood loss exceeding the normal is termed as…….

5. Dysmenorrheal is classified as ……and …….

6. During menopause there is a decline in the hormone…….....

Answers

1. Primary amenorrhea

2. Secondary amenorrhea

3. Oligomenorrhoea

4. Menorrhagia

5. Primary dysmenorrhoea and secondary dysmenorrhoea

6. Oestrogen

Self-assessment questions on abortion

Attempt to answer the questions given below: Write true or false for each of the following statement

1. Abortion is the interruption of pregnancy at any stage of pregnancy. **True or False**
2. Spontaneous abortion and Induced abortion are the two major classifications of abortions. **True or False**
3. Postabortion care should be given to all clients who have had an abortion. **True or False**
4. Spontaneous and Induced abortion are all regarded as criminal abortion. **True or False**

Fill in the space provided

5. The abortion that occurs without external interference is referred to as spontaneous abortion. **True or False**
6. A situation where there has been three or more abortions is referred to as Harbiyual abortions **True or False**

Answers to the above questions

1. False
2. True
3. True
4. False
5. True
6. True

3.11 Post Abortion Care

You are now going to learn about the care that is given to a woman with various types of abortion**.** Incomplete abortion is treated by removing the remaining POC from the uterus. Method used for emptying (evacuating) the uterus depends on duration of pregnancy based on LMP and uterine size, availability of equipment, supplies and skilled staff. If skilled staff and supplies are not available, the woman should be referred immediately to an appropriate facility. In order to reduce the risk of serious complications or disability, and death, to women presenting with the complications of incomplete abortion, health care systems must provide easily accessible, quality post abortion care at all service levels. Currently, emergency post abortion care is provided mainly in higher-level district hospitals. Not only does this lead to high cost of providing these services, but it makes them inaccessible to many women. The prevention of abortion related illness and mortality is dependent on the availability of emergency post abortion throughout the health system The concept of post abortion care presented in this manual provides the basis for reducing morbidity and mortality from incomplete abortion, whether spontaneous or induced.

History of Postabortal Care

Since the 1950s' many developed and some developing countries have liberalized their abortion laws, although this trend is not much evident in Africa or Latin America. Arguments for legal reform usually centre on public health concerns such as reducing maternal mortality and improving reproductive health, as well as on the recognition of reproductive rights as an essential element of human rights. The political situation and commitment of advocacy groups in each country largely determine the success of liberalization efforts.

The term "post abortion care" was first articulated as a critical element of women's health initiatives in the early 1990s, and the message was to integrate in the developing world. Under the same period post abortion family planning and other reproductive health care as essential elements were listed as a framework for providing quality abortion care. In the same period a model was developed which comprised of three elements: *emergency treatment services for complications of spontaneous or unsafely induced abortion; post abortion family planning counseling* and *services*; and *links between emergency abortion treatment services* and *comprehensive reproductive health care*.

The health care system of the 1990s still relied on the use of methods that are still being used today, such as "dilatation and curettege or 'D & C' and Vacuum and Aspiration (Manual Vacuum and Electrical Vacuum Aspiration). Manual vacuum aspiration, an accessible and low-cost method, enables midlevel providers and other health professionals in primary-level facilities that do not have operating theatre, general anaesthesia or electricity to offer uterine evacuation on-site.

Elements of Post Abortion Care

Comprehensive post abortion care services should include both medical and preventive health care. In order to realize this, five elements of post abortion care were developed, that reflects, from a provider and a consumer perspective, an enhanced vision of high-quality, sustainable services. The essential elements of postabortal care shift the focus from facility-based medical treatment to a public health approach that responds to women's broader sexual and reproductive health needs. The key elements include;

Community and service provider partnerships

At this level, Community health education and mobilization have been identified as key strategies to combat unsafe abortion, increase access to and quality of post abortion care programs, and improve women's reproductive health and lives. In order to achieve this, community leaders and advocacy groups, lay health workers, traditional healers and formally trained service providers have been identified as major key partners of nurses and other health personnel in fulfilling the following tasks;

• Education to increase contraceptive use and thereby help women prevent unwanted pregnancy, space births and reduce unsafe abortion;
• Participation by community members in decisions about availability, accessibility and cost of services;
• Education about obstetric emergencies and appropriate care-seeking behaviours;
• Mobilization of community resources, including transportation, to ensure that women experiencing obstetric emergencies receive timely care;
• access to services for special populations of women, including adolescents, women with HIV or AIDS, women who have experienced violence or genital cutting, women who have sex with women, refugees, commercial sex workers, and women with cognitive or physical disabilities;
• Advocacy for holistic, human rights-based reproductive health policies and services that meet community expectations, priorities and needs; and
• planning for sustainability.

Counseling

Effective counseling enhances a woman's understanding of the psychosocial circumstances surrounding her reproductive past and future, and increases her confidence in her ability to participate in her health care.

The aims of counseling are to:

• solicit and affirm women's feelings and provide emotional support throughout the post abortion care visit;
• ensure that women receive accurate and appropriate information about their medical conditions, test results, treatment and pain management options, and follow-up care;

• ensure that women understand how to prevent complications after the procedure and that they know when and where to seek care for complications if they arise;
• help women clarify their thoughts and decisions about pregnancy, abortion, treatment, resumption of ovulation and future reproductive health; and
• enable providers, by listening to and asking questions of women, to better understand and respond to factors that can affect a woman's health care needs, such as experiences with sexually transmitted infections (including HIV), violence-induced trauma or the effects of female genital cutting.

Treatment
Treatment remains a critical part of care, because woman who has had an incomplete spontaneous or unsafely induced abortion will, in many cases, need uterine evacuation and other medical intervention.

Family Planning and Contraceptive Services

Women that receive post abortion services should be given this package in order to prevent an unwanted pregnancy or/and space births. For this to happen facilities' such as contraceptive service infrastructure must be adequate contraceptive commodities must be provided and providers must be knowledgeable about which methods are appropriate for women following treatment.

Reproductive and other health services
There should be provision of all appropriate health services at the time women receive post abortion care, preferably at the same facility. When a facility is unable to provide needed services, it should have functional mechanisms in place for making referrals (either within the facility or to another one), receiving feedback from referral sites or providers, and performing follow-up; such mechanisms should include consistent and accurate record-keeping. The following additional services might be offered:
•Education about the prevention of sexually transmitted infections, including HIV, as well as screening, diagnosis and treatment;
• Services addressing gender-based violence, including screening, counseling and referral;
• Infertility diagnosis, counseling and treatment;
• Nutrition screening and education, and treatment of nutritional deficiencies;
• Hygiene education; and
. Screening, counseling and treatment for reproductive-related cancers

Principles of Abortion Care
A number of issues must be considered in providing emergency post abortion care. Treatment may include stabilization and referral, oxygen, intravenous (IV) fluid replacement, blood transfusion or medicines (for example, antibiotics, management of pain and tetanus toxoid). These topics are discussed below.

Emergency treatment
Emergency treatment for post abortion complications includes:
- An initial assessment to confirm the presence of abortion complications
- Talking to the woman regarding her medical condition and the treatment plan
- Medical evaluation (brief history, limited physical and pelvic examinations)
- Prompt referral and transfer if the woman requires treatment beyond the capability of the facility where she is seen
- Stabilization of emergency conditions and treatment of any complications (both
- complications present before treatment and complications occurring during or after the treatment procedure)
- Uterine evacuation to remove retained products of conception (POC)

Pelvic Examination
The **purpose** of the pelvic examination is to **determine** the **size**, **consistency** and **position** of the uterus, to check for tenderness and to determine the degree of cervical dilatation. Careful assessment of the vagina and cervix to check for tears and bleeding is essential.

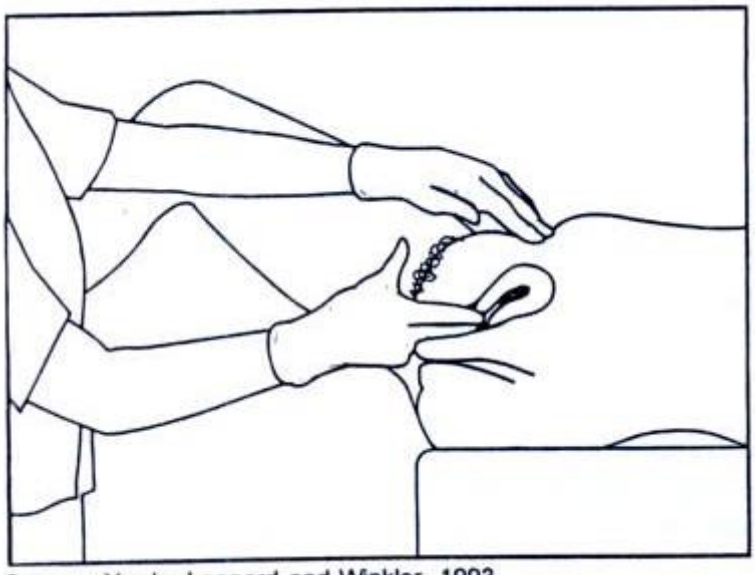
Prior to the pelvic examination explain the purpose of the examination to the patient and be sure she **has emptied her bladder**. For the exam, the patient should be on an examination table equipped with stirrups and she should be covered with a cloth or drape to protect her privacy. The clinician should wear new, undamaged examination gloves.
The guiding principles of providing emergency post abortion care include;

- **Stabilizing the condition of the patient then referral**
- **Stabilization**
  Before the woman is referred to the next level of care, as a referring site, treat and stabilize the condition of the patient.
  The central elements in stabilizing the patient for referral are:
  · Management of the airway, respiration and circulation
  · Control of bleeding
  · Intravenous fluid replacement, including blood transfusion if necessary
  · Management of pain and administer tetanus toxoid if necessary
  · If needed Antibiotic therapy.
- **Referral**
- The ability of a referring site to promptly transport the patient to the referral centre can be lifesaving. Standing arrangements for transport should exist at all health delivery sites. These may require coordination with community resources such as police, military, agricultural extension services, other health care facilities, governmental institutions and churches and local clubs and involuntary organizations
- As referring site alert the referral centre that the patient is coming and send a referral note with the patient
- In an emergency referral, the patient should be accompanied by trained staff to the referral centre.
- During referral keep the patient warm and her feet should be elevated in cases of shock or haemorrhage. Do not use external sources of heat as skin can be easily burned;

Speculum Examination
Before inserting the speculum:

- Look at the genital area to see if there is bleeding and if so, how much.
- Check the odour of the vaginal blood or discharge

Next, insert the speculum to look at the cervix. Remove any visible POC from the vaginal canal or cervical os and keep the tissue for examination.
Note any abnormal-smelling discharge, the amount of bleeding and whether the cervix is open (dilated). Check for cervical or vaginal tears or perforations, or pus in the cervix.
Cervical infection increases the chance of postoperative uterine infections, including acute pelvic inflammatory disease (PID). If infection is present or suspected, take samples for bacteriological culture, if possible and available, and begin antibiotic treatment with broadspectrum antibiotics **before** performing MVA.
Bimanual Examination
Assess the size of the uterus. Compare the actual size of the uterus with date of the last menstrual period (LMP). ††† With an incomplete abortion, the uterus usually is smaller than the LMP might suggest.
Assess the shape and position of the uterus. Correctly determining the shape and position of the uterus is critical to the safety and success of the procedure.
Diagram showing a pelvic examination: assessing the shape and position of the uterus



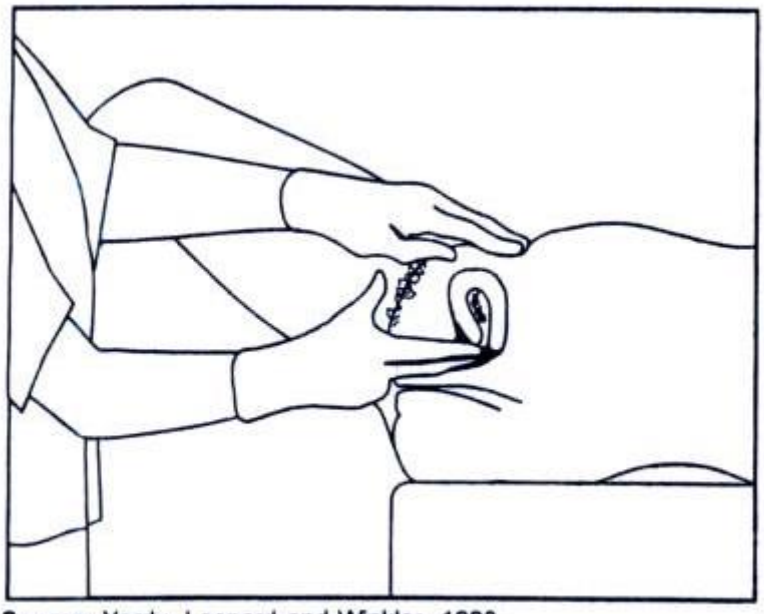
Source: Yordy, Leonard and Winkler, 1993.

If the uterus is larger than expected, it may indicate:

- Wrong date
- Presence of multiple pregnancies
- A uterus filled with blood clots (that is, postabortal syndrome)
- A molar pregnancy (that is, trophoblastic disease)
- Presence of uterine fibroids (that is, smooth muscle tumours of the uterine wall) If the uterine size is difficult to assess, it may be because the uterus is tilted backward (retroversion); the patient is overweight or is abdominal guarding (not relaxing the abdomen so the uterus cannot be felt). It is important **not** to begin a MVA procedure for incomplete abortion until the size of the uterus has been determined. Therefore, if problems in determining the size or position of the uterus is encountered have a more experienced clinician (if available) assess the uterine size. If there is any doubt, treat the woman as if the pregnancy was advanced further than suspected initially.

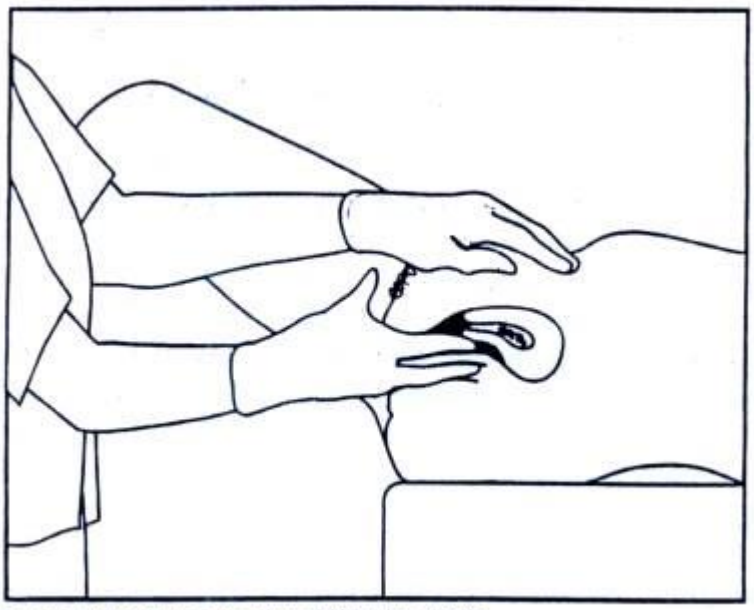
Anteverted uterus (tilted forward): If the uterus is excessively anteverted (anteflexed), the clinician must be especially careful during the procedure because the risk of perforation may be increased when performing MVA.

Palpating anteverted uterus



Source: Yordy, Leonard and Winkler, 1993.

Retroverted uterus (tilted backwards): A mildly retroverted uterus may be best palpated by rectovaginal examination. (Perforation may be more likely if the clinician is not aware that the uterus is markedly retroverted.)
Palpating a retroverted uterus by retro-vaginal examination



Note: After completing the rectovaginal examination, gloves should be immediately removed, decontaminated and discarded according to recommended infection prevention practices

TYPES OF UTERINE EVACUATION

There are two procedures most widely used for the management of incomplete abortion. The instrumental curettage and vacuum aspiration. The first one is performed with a rigid metal curette, in the operation room and usually under general anesthesia. The second uses suction from electrical or manual syringe sources, plastic or metal cannula for evacuating the uterus and can be performed on an outpatient basis, under local anesthesia or analgesia, and it the most preferred compared to the former.

MANUAL VACUUM ASPIRATION (MVA)

Vacuum aspiration uses suction to aspirate uterine tissue by use of the cannula through the cervix. . It may be used as a method of induced abortion, a therapeutic procedure used after miscarriage, or a procedure to obtain a sample for endometrial biopsy**.** Vacuum aspiration is an outpatient procedure that generally involves a clinic visit of several hours. The procedure itself typically takes less than 15 minutes. Suction is created with either an electric pump (electric vacuum aspiration or EVA) or a manual pump (manual vacuum aspiration or MVA). Both methods use the same level of suction, and so can be considered equivalent in terms of effectiveness and safety.

Procedure tasks for manual vacuum aspiration

- Explain each step of the procedure prior to performing it.
- Give oxytocin 10 iu im or ergometrine 0.2 mg IM.
- Perform a bimanual examination to determine the uterine size and position. Before performing pelvic examination, ensure that the patient empties her bladder and washes her lower abdomen and external genitalia with soap and water
- Minimize the risk of infection by thorough hand washing with soap and water before and after each MVA procedure, use of sterile instruments and gloves, cleaning the cervix and vagina with an effective antiseptic before inserting any instrument through the cervix and into the uterine cavity, use of none touch technique for MVA procedure
- Have the instruments, needles, syringes and supplies required for MVA readily available and prepared.
- Ensure that pain is managed by giving analgesics 15-30 minutes before if it is IM

- Gently insert the speculum and remove any protruding products of conception and check for any cervical tears. Also remove any intra-uterine device if it is there
- Apply an antiseptic to cervix and vagina two times.
- Administer para cervical block(if necessary)
- Put single toothed terneculum or vulsellum forceps on the lower lip of the cervix.
- Apply traction on the cervix
- Dilate the cervix (if needed) that is when the cervical canal will not allow passage of the cannula selected for use. When required, dilation should be done gently with mechanical dilators or with cannulae of progressively increasing size, taking care not to tear the cervix or to create a false opening.
- While holding the cervix steady and gently and applying traction, insert the cannula gently through the cervix into the uterine cavity
- Push the cannula slowly until into the uterine cavity until it touches the uterine fundus. Note the uterine depth by the dots visible on the cannula. The dot nearest the tip of the cannula is 6cm from the tip and the other dots are at 1cm interval. After measuring the uterine size with draw the cannula slightly.
- Attach the prepared syringe to the cannula by holding the forceps (or teneculum) and the end of the cannula in one hand and the syringe in the other. Make sure that the cannula does not move forward into the uterus as you attach the syringe.
- Release the pinch valve on the syringe to transfer the vacuum through the cannular to the uterine cavity. Bloody tissue and bubbles should begin to flow through the cannula into the syringe.
- Evacuate any remaining content of the uterine cavity by gently rotating the syringe and then moving the cannula gently and slowly back and forth within the uterine cavity. Do not rotate the cannula more than 180 degrees.
- Check for signs of completion, the MVA is complete when
- Red or pink foam and no more tissue is seen in the cannula
- A gritty sensation is felt as the cannula passes over the surface of the evacuated uterus.
- The uterus contracts around (grips) the cannula.
- Withdraw the cannula, detach the syringe and then place the cannula in the decontamination solution.
- Empty contents of MVA syringe into a strainer by pushing on the plunger.
- Do not discard the syringe until you are sure that the procedure ids complete.
- Quickly inspect the tissue removed from the uterus
- Quickly inspect the tissue removed from the uterus
- For quantity and presence of POC
- To assure complete evacuation, and
- To check for a molar pregnancy
- Remove forceps or teneculum and speculum. Decontaminate all instruments and place sharp instruments in a separate puncture proof container.
- Perform bimanual examination again
- Insert speculum and check for bleeding
- If uterus is still soft or bleeding persists, repeat the procedure.

Post Procedure Tasks

- Before removing gloves dispose waste material in a lick proof container or plastic container
- Flash MVA and cannula with 0.5% Chlorine and submerge in solution for decontamination
- If reusing needle or syringe, fill syringe (with needle attached with 0.5% chlorine and submerge in solution for decontamination). If disposing of needle and syringe, place in a puncture proof container.
- Immense both gloved hands in decontaminated solution then remove gloves by turning them inside out and discard them in a lick proof container or plastic bag.
- Wash hands thoroughly with soap and water.
- Immense both gloved hands in decontaminated solution then remove gloves by turning them inside out and discard them in a lick proof container or plastic bag.
- Wash hands thoroughly with soap and water.

To prepare the patient for discharge

- Tell the patient to expect vaginal bleeding or spotting and to report excessive bright-red blood immediately or any bleeding that lasts longer than 10 days.
- Advise the patient to watch for signs of infection, such as a temperature higher than 100.5° F (38° C) and foul smelling vaginal discharge.
- Encourage the gradual increase of daily activities to include whatever tasks the patient feels comfortable doing, as long as these activities do not increase vaginal bleeding or cause fatigue. Most patients return to work within 1 to 4 weeks.
- Urge 1 to 2 weeks abstinence from intercourse, and encourage use of a contraceptive when intercourse is resumed.
- Instruct the patient to avoid using tampons for 1 to 2 weeks.
- Be sure to inform the patient who desires an elective abortion of all the available alternatives. She needs to know what the procedure involves, what the risks are, and what to expect during and after the procedure, both emotionally and physically. Be sure to ascertain whether the patient is comfortable with her decision to have an elective abortion.
- Encourage her to verbalize her thoughts both when the procedure is performed and at a follow-up visit, usually 2 weeks later. If you identify an inappropriate coping response, refer the patient for professional counselling.
- To help prevent elective abortion, medical and nursing personnel need to make contraceptive information available. An educated population motivated to utilize contraception would have little need for elective abortion.
- Encourage the patient to see her doctor in 2 to 4 weeks for a follow-up examination
- To minimize the risk of future spontaneous abortions, emphasize to the pregnant woman the importance of good nutrition and the need to avoid alcohol, cigarettes, and drugs.
- Most clinicians recommend that the couple wait two or three normal menstrual cycles after a spontaneous abortion has occurred before attempting conception.
- If the patient has a history of spontaneous abortions, suggest that she and her partner have thorough examinations. For the woman, this includes premenstrual endometrial biopsy, a hormone assessment (oestrogen, progesterone, and thyroid, follicle-stimulating, and luteinizing hormones), and hysterosalpingography and laparoscopy to detect anatomic abnormalities.
- Genetic counselling may also be indicated.

Dilatation and Curettege (D & C)

Dilation and Curettege (also sometimes called **dilation and extraction**) A dilation and curettage procedure, also called a D&C, is a surgical procedure in which the cervix (lower, narrow part of the uterus) is dilated (expanded) so that the uterine lining (endometrium) can be scraped with a curette (spoon-shaped instrument) to remove abnormal tissues. A suction D&C uses suction to remove uterine contents. It is a method of abortion as well as a therapeutic procedure used after miscarriage to prevent infection by ensuring that the uterus is fully evacuated.

Usage

It is the preferred method of evacuating the uterus if the abortion occurs in the 1st and 2nd trimester.

Instructions before the procedure

- Explain the procedure to the patient and give her the opportunity to express their fears and concerns about the procedure
- Assist the doctor in assess the condition of the patient to ensure that they are in good health before the procedure. Assist in the collection of specimens and follow up of laboratory results
- Give instructions to the patient depending on the type of procedure to be performed. If it is general anaesthesia, instruct patient to starve 8 hrs before the procedure.

- Ask the patient if is sensitive to any drugs
- Ask patient if has any history of bleeding tendencies

Physical preparations before the procedure

- Ask patient to remove clothes and give them a gown
- Instruct the patient to empty the bladder
- Ensure that patient have an IVF access
- Insert the urinary catheter on the patient
- Escort the patient to the room where the procedure is being performed

After the procedure

- The recovery process will vary depending on the type of procedure performed and type of anaesthesia that was administered.
- Explain to the patient that they will experience some abdominal cramps, which is normal
- Encourage the patient the use of sanitary pads

Post arbortal sexually transmitted infections
After an abortion, if a woman is not given proper education on how to prevent sexually transmitted infections, she may contract these infections.

The following are some of the post abortal sexually transmitted infections:

- Bacterial vaginosis which could be due to gonorrhoea
- Gonorrhoea caused by neisseria gonorrhoea
- HIV infection due to HIV virus
- Chlamydia trachomatis infection
- Pelvic inflammatory disease and others

Post abortion family planning and counselling
A woman's fertility returns almost immediately after an incomplete abortion, as early as eleven days if the pregnancy was less than 12 weeks. Therefore, she must consider whether or she wants to become pregnant again soon. In the case of spontaneous abortion, she may wish to become pregnant again quickly, and unless there are any medical problems, there is no reason to discourage her from doing so.
For many women, however, this abortion represents a clear desire not to be pregnant at this time. Thus, the woman (and her partner if she desires) needs to receive counseling and information about her return to fertility and available contraceptive methods.
The time of treatment for an incomplete abortion, however, may not be the best time for her to make decisions that are **permanent** or **long-term**. Counseling needs to be geared to the client's emotional and physical state. Full and informed choice is critical in the selection of any method and especially for provider-dependent methods (IUDs, injectables, implants and voluntary sterilization).
However lack of access to adequate family planning services is a major contributor to the global problem of unsafe abortion. In most health systems, women treated for abortion Complications rarely receive any counseling or services to prevent subsequent unwanted pregnancies. Because a woman seeking treatment for incomplete abortion already may have experienced an unwanted pregnancy either as the result of not using contraception or method failure, she may be in need of effective contraception.

Factors contributing to lack of post abortion family planning services
A number of factors limit provision of family planning services to women who have experienced an abortion. These factors, which increase a woman's risk of repeated unwanted pregnancies, include:

- Lack of understanding of and attention to women's reproductive health needs on the part of providers

- Lack of services for some groups of women (for example, adolescents, single women)
- Separation of emergency post abortion care services and family planning services
- Misinformation among providers about appropriate post abortion contraceptive methods
  Lack of acknowledgment of the problem of unsafe abortion and the resulting need for contraceptive services

Counseling and informed choice
Strategies to support informed choice:
- Provide information on a variety of methods
- Conduct in a private, comfortable setting that foster trust
- Focus on client's needs
- Adhere to client's rights and social equality· exhibit respect and mutual understanding

The goals of post abortion family planning counseling are:
- To help the woman understand the factors that led to an unwanted pregnancy (if appropriate), in order to avoid repeating the situation;
- To help her and her partner (where appropriate) decides if she wants to use a contraceptive method;
- If she does, to help her (and her partner) choose an appropriate method; and
- To prepare her (and her partner) to use the method effectively.

Increasing access to postabortal family planning services
Steps necessary to realize this goal include:
- Establishing strong functional links between emergency post abortion care services and family planning services
- Developing protocols for post abortion contraception
- Provide range of all contraceptive methods in family planning units
- Using research to support improvements in the quality of post abortion care
- Counselling should be profiled according to the patient's needs.
- Clients should be referred appropriately to the next level of care if chosen method is not available or if the provider has no skills to give patient the method according to the eligibility criteria.
- When a method is picked, give client the necessary information on how the method works, side effects, when to return for follow up or resupply.

Infection Prevention
With MVA, as with any invasive procedure, there is risk to patients, providers and other staff from contact with blood and other body fluids that may carry blood-borne diseases such as hepatitis B and HIV/AIDS. To minimize this risk, universal precautions (blood and body fluid precautions) must be observed at all times in providing post abortion care, processing tissue samples, and handling equipment and disposing of waste. The risk of transmitting infection is reduced through using protective barriers (including hand washing and appropriate processing of reusable instruments), using the no-touch technique for performing MVA and disposing of contaminated waste properly.
The infection prevention practices discussed in this chapter are simple, convenient and practical and can be used in at your health facility it is important to know about the terminologies that are used in infection prevention as follows;
Microorganisms are the causative agents of infection. They include bacteria, viruses, fungi and parasites. For infection prevention purposes, bacteria can be further divided into three categories: vegetative (staphylococcus), mycobacteria (tuberculosis) and endospores (tetanus). Endospores are the most difficult to kill.
The terms asepsis, antisepsis, decontamination, cleaning, disinfection and sterilization are often confusing. For the purposes of these guidelines, the following explanations will be used:
Asepsis and aseptic technique are general terms used in health care settings to describe the combination of efforts made to prevent entry of microorganisms into any area of the body where they are likely to cause infection. The goal of asepsis is to reduce to a safe level, or eliminate, the number of microorganisms on both animate (living) surfaces (skin and tissue) and inanimate objects (surgical instruments and other items).
Antisepsis is the prevention of infection by killing or inhibiting microorganisms on skin and other body tissues by using a chemical agent (antiseptic).

Decontamination is the process that makes objects safer to be handled by staff, especially cleaning personnel, before cleaning. Objects to be decontaminated include large surfaces (for example, pelvic examination or operating tables), surgical instruments, gloves and other items contaminated with blood or body fluids.

- Cleaning is the process that physically removes all visible blood, body fluids and any other foreign material such as dust or dirt from skin and inanimate objects.
- Disinfection is the process that kills most, but not all, disease-causing microorganisms on inanimate objects.
- High-Level Disinfection (HLD), by boiling, steaming or soaking in special chemicals, eliminates all microorganisms (except some bacterial endospores) on inanimate objects.
- Sterilization is the process that eliminates all microorganisms, including bacterial endospores, from inanimate objects.

Protective Barriers

Protective barriers are physical, mechanical or chemical processes which help prevent the spread of infectious microorganisms from client to client, clinic staff to client, or vice versa.

Protective barriers include:

- Hand washing
- Wearing gloves (both hands) and surgical attire
- Using antiseptic solutions
- Processing equipment, instrument and other items
- Managing clinical waste
- Using antiseptic solutions for prepping the skin prior to surgery or a procedure such as
- MVA
- Using drapes during surgical procedures

Hand washing

Hand washing may be the single most important procedure in preventing infection. To encourage hand washing, program managers should make every effort to provide a continuous supply of fresh water, either from the tap or a bucket, and soap.

Indications

- Before and after examining a client especially when touching mucous membrane
- Before putting on sterile or High-Level Disinfected (HLD) gloves
- After removing gloves, as they may have invisible holes or tears
- After handling contaminated objects, such as used (soiled) instruments
- When accidentally touching blood or other fluids (for example, when collecting laboratory specimens).

Next we are going to discuss termination of pregnancy Act as done below;

Termination of Pregnancy Act

Termination of pregnancy (also known as induced abortion) is the deliberate termination of pregnancy and removal of the embryo or foetus and the products of conception from the uterus. It is currently performed by different procedures according to the gestation period. In the first trimester (up to 12 weeks gestation), suction (vacuum aspiration) or medical termination is used. Pregnancies in the second trimester (up to 24 weeks gestation) may either be terminated by a process of dilatation and evacuation or by medical means. Termination of pregnancy may either be legal (allowed by law) or illegal. Unless allowed by law, any termination of pregnancy is illegal and is considered a criminal offence. Termination of Pregnancy Act is an official provision in the laws of the country for the lawful termination of pregnancy. Termination of Pregnancy Laws and reasons advanced for termination of pregnancy, vary from country to country.

Termination of Pregnancy Act (TOP)

Termination of pregnancy Act was enacted in Zambia in 1972 and Amended in 1994. It is commonly referred to as the TOP Act. The TOP Act states that a Safe Abortion is legal in Zambia under certain conditions. The TOP act was enacted in 1972 and amended in 1994. The law state that's safe termination of pregnancy is available when:

- There is risk to a life of the pregnant woman.
- There is risk of injury to the pregnant woman
- The child will be born mentally or physically handicapped

- When continuation of the pregnancy puts the lives of other existing children at risk.
- When pregnancy result from rape or defilement.

Safe termination of Pregnancy is legal in Zambia when: It is approved by 3 medical personnel of whom one doctor should be a specialist in the field under consideration. One doctor can certify for TOP if it is immediately necessary to save the life or to prevent grave permanent injury to the physical or mental health of the pregnant woman. It is done in a clean, safe and registered environment. A trained service provider does the termination. The woman makes a free, informed choice without coercion.

You role as a nurse is to educate the public about the TOP Act, the consequences of unsafe abortion and the availability of family planning services that helps prevent the unwanted pregnancies.

Self assessment questions

Fill in the blanks

1. Mention the most preferred method of uterine evacuation…….
2. Identify the five elements of postaobrtion care (i)……..,……
   (.ii) ……., (iii)…… (iv)……
   (v)…….
3. .identify the two principles of post abortion care (i)……
   (ii)…….
3. Mention the first step in the processing of instruments used during MVA in the infection prevention procedure.....
4. Termination of pregnancy by the unauthorized person is allowed as long as the condition of the woman is life threatening. **True or False (chose the correct answer)**

Answers

1. MVA
2. (i) Community and service provider partnerships (ii) Counseling (iii) Treatment (iv) Family planning and contraceptive services (v) Reproductive and other health services
3. (i) Stabilizing the condition of the patient before referral (ii) Referral
4. Decontamination
5. False

3.12 Management of a Client with Ectopic Pregnancy

Ectopic pregnancy is the implantation of the fertilized ovum at a site other than the uterine cavity (Myles, 2006). In a normal pregnancy, a fertilized egg travels through a fallopian tube to the uterus. The egg attaches in the uterus and starts to grow. But in an ectopic pregnancy, the fertilized egg attaches (or implants) in someplace other than the uterus, most often in the fallopian tube. (This is why it is sometimes called a tubal pregnancy.) In rare cases, the egg implants in an ovary, the cervix, or the belly. About 1% of pregnancies is in an ectopic location and of these 98% occurs in the fallopian tubes. An ectopic pregnancy can either be un-ruptured or ruptured.

There is no way to save an ectopic pregnancy. It cannot turn into a normal pregnancy. If the egg keeps growing in the fallopian tube, it can damage or burst the tube and cause heavy bleeding that could be deadly. If a woman has an ectopic pregnancy, she will need quick treatment to end it before it causes dangerous problems. Under this discussion, you will cover, the definition, causes, common sites of ectopic pregnancy and the management of both un-ruptured and ruptured ectopic pregnancy.

Ectopic pregnancy is the implantation of the fertilized ovum at a site other than the uterine cavity (Myles, 2006). The common sites where ectopic pregnancy can occur are;

- Fallopian tube (Fimbriated ends – 17%, ampulla – 55%, isthmus – 25%, interstitial portion – 2%).
- Ovaries - 0.5%

- Abdominal cavity - 0.1%
- Cervix

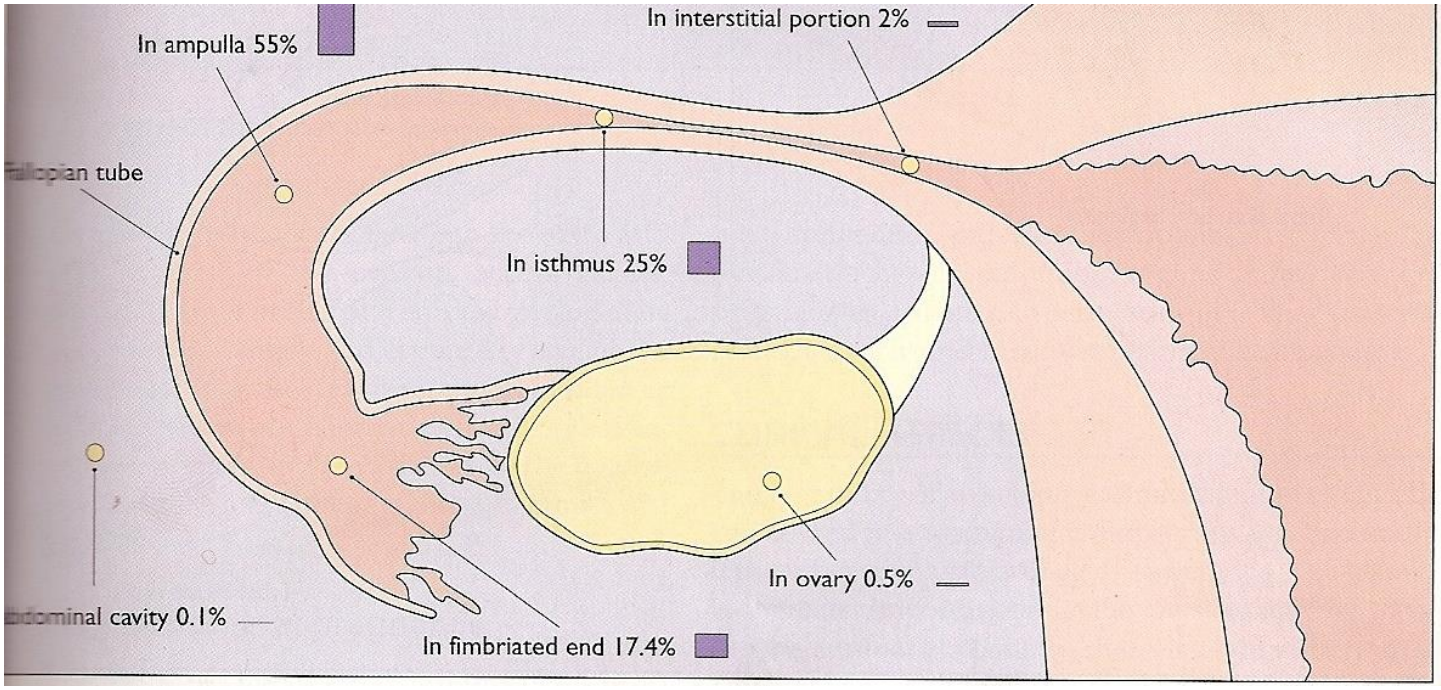


Figure 18: Common sites where ectopic pregnancy can occur

Causes and risk factors of ectopic pregnancy

Causes and Risk Factors

An ectopic pregnancy is often caused by damage to the fallopian tubes. A fertilized egg may have trouble passing through a damaged tube, causing the egg to implant and grow in the tube. Things that make you more likely to have fallopian tube damage and an ectopic pregnancy include:

- Smoking. The more you smoke, the higher your risk of an ectopic pregnancy.
- Pelvic inflammatory disease (PID). This is often the result of an infection such as chlamydia or gonorrhoea.
- Endometriosis, which can cause scar tissue in or around the fallopian tubes.
- Some medical treatments can increase your risk of ectopic pregnancy. These include: Surgery on the fallopian tubes or in the pelvic area and Fertility treatments such as in vitro fertilization
- Other causes include:
    - Tumors in the pelvis
    - Congenital abnormalities of the tubes – narrowing of fallopian tubes as result the ovum fails to pass through.
    - Transmigration of the ovum
    - Previous Ectopic pregnancy
    - Failed IUCD (Intra-uterine Contraceptive Device)
    - Complications of a ruptured appendix

Types of ectopic pregnancy

Un-ruptured ectopic pregnancy

Un-ruptured ectopic pregnancy is the pregnancy that implants and is growing in place outside the uterine cavity, but the fallopian tubes remain intact (nu-ruptured).

Un-ruptured ectopic pregnancy occurs in about 60% cases. Symptoms are usually due to tubal distension and hematoma formation in the tube, into the broad ligament or in the peritoneal cavity.

Signs and symptoms of un-ruptured ectopic pregnancy

The classical Triad is pelvic pains, an adenexal mass and a positive pregnancy test

Others include;

- Slight activity of the breasts such as slight breast enlargement, tingly sensation
- On bimanual examination, the uterus is slightly enlarged and the cervix is soft.
- There may be dark blood oozing from the external os
- Cervical excitation with and tenderness on the side of the ectopic
- On bimanual examination, the tubal mass is rarely felt as a diffuse boggy swelling
- If it is of any size, it displaces the uterus to the opposite size of the pelvis.
- localised lower abdominal pain which is colic in nature, due to distention of the gravid tube by its effort to contract and expel the ovum
- Amenorrhea- usually there is a short period of missing a period (6 to 8 weeks), although in 20% of cases this may not be present
- Nausea and vomiting- due to abdominal distension and pleuritic chest pain which is a sign of diaphragmatic irritation
- Shoulder pain (common in tubal pregnancy) an indication of bleeding in the peritoneal cavity. The pain may be referred to the shoulder if blood tracks to the diaphragm and stimulates the phrenic nerve
- Abdominal Examination-will demonstrate tenderness in one iliac fossa. If there has been much intra-peritoneal bleeding there will be general tenderness and resistance to palpation over the whole abdomen

Management

In most cases, an ectopic pregnancy is treated right away to avoid rupture and severe blood loss. The decision about which treatment to use depends on how early the pregnancy is detected and the overall condition. For an early ectopic pregnancy that is not causing bleeding, you may have a choice between using medicine or surgery to end the pregnancy.

Laparoscopic surgery and systemic methotrexate are the two best options for the treatment of a non-complicated tubal pregnancy.

Medical Management

In unruptured ectopic, if the gestational sac is small on ultrasound and the hCG level is not high, methotrexate may be injected into the ectopic gestation so that the viable trophoblast and embryo are absorbed or given as an intramuscular injection 50mg/m^2.

Methotrexate is an antimetabolite chemotherapeutic agent that binds to the enzyme dihydrofolate reductase, which is involved in the synthesis of purine nucleotides. This interferes with DNA synthesis and disrupts cell multiplication

Indications

Systemic methotrexate can be recommended only for:

- Haemodynamically stable women
- An unruptured tubal ectopic pregnancy
- No signs of active bleeding presenting with low initial serum human chorionic gonadotropin (hCG) concentrations.
- The woman must be reliable, compliant, and able to return for follow-up.
- The size of the gestation, which should not exceed 3.5 cm at its greatest dimension on Ultra sound measurement.

Contra Indications

- A blood hCG level of greater than 15,000 IU/L
- Fetal cardiac activity
- Free fluid in the cul-de-sac on US (presumably representing tubal rupture)
- Moderate to severe anaemia, leukopenia or thrombocytopenia
- Active pulmonary disease
- Active peptic ulcer disease
- Intrauterine pregnancy
- Evidence of immunodeficiency

Side Effects

Adverse effects associated with the use of methotrexate can be divided into drug adverse effects and treatment effects

1. Drug adverse effects include:
   - Nausea, vomiting, stomatitis, diarrhoea, gastric distress, and dizziness.
   - Transient elevation in liver enzymes is also known to occur.
   -Serious reactions, such as bone marrow suppression, dermatitis, pleuritis, pneumonitis, and alopecia, can occur with higher doses and are rare with doses used in the treatment of ectopic pregnancy
2. . Treatment effects of methotrexate include:
   - An increase in abdominal pain (occurring in up to two thirds of patients)
   - An increase in blood human chorionic gonadotrophic hormone (bhCG) levels during first 1-3 days of treatment.
   -Vaginal bleeding or spotting.

Benefits

1. Using methotrexate to end an ectopic pregnancy spares one from an incision and general anaesthesia.
2. Less tubal damage
3. Methotrexate does not cause side effects and can take several weeks of hormone blood-level testing to make sure that treatment has worked. Measurement of serum hCG is done usually done weekly until negative.
4. Less cost and need for hospitalization

Surgical management

If the symptoms persist, a second –look laparoscopy may be necessary. An incision is done on the swollen tube over the ectopic pregnancy, the embryo aspirated and homeostasis achieved (salpingostomy).

Complications

- Tubal infertility
- Ruptured ectopic pregnancy (haemorrhage, shock)
- Repeat ectopic pregnancy due to adhesions
- Bowel obstruction due to adhesions
- Incisional hernia

Ruptured Ectopic Pregnancy

A ruptured ectopic pregnancy is the pregnancy that has been implanted and is growing in the fallopian tubes and has ruptured the tube.

Ruptured ectopic pregnancy is an emergency which requires urgent attention in order to save life. The condition can be fatal if resuscitation and surgical interventions are not done immediately within the shortest possible time. The patient has to be prepared for an emergency surgery. A ruptured ectopic pregnancy and resulting haemorrhage is one of the principle causes of maternal death in the first trimester (Young, 2010).

Clinical Features of ruptured ectopic pregnancy

1. A sudden excruciating abdominal and pelvic pain
3. Signs of shock
    - (Pallor, cold clammy skin, tachycardia, fainting, restlessness, vomiting, hypovolaemia, hypotension)
4. Slight vaginal bleeding
5. Mild abdominal distension
6. Paracentesis positive for blood aspiration
7. Culdocentesis positive for blood aspiration
8. On vaginal examination:
    - Cervical Os closed
    - Uterus bulky
    - Positive cervical excitation
    - Bulging fornices
9. Amenorrhea
10. Shoulder pain due to peritoneal irritation

Nursing Management

Airway

The patient should be assessed continuously and maintain a clear airway. The patient should be nursed in supine position and the head tilted sideways. Any secretions should be sucked using a suctioning machine. Any tight clothing around her neck should be loosened,

Breathing

Ensure that the patient is breathing well and monitor the respirations. Humidified oxygen via a face mask should be administered at 6-10l/min.

Circulation

Access of the vein with two large-bore intravenous cannulaes will be used. Blood will be collected for urgent haemoglobin; grouping and cross match, clotting time to rule out Disseminated Intravascular Coagulation (DIC) and Rapid Plasma Reagent (RPR). Normal saline 0.9% will be given to prevent hypovolaemic shock. In case there is severe pallor and low haemoglobin, blood transfusion with whole blood will be given. Whilst the patient is in supine position, the foot end of the bed will be elevated to improve blood supply to the vital organs. The patient should also be placed on a cardiac monitor to monitor the blood gas levels. Vital signs such as temperature, pulse, respiration and blood pressured will be monitored at least every 15 minutes to detect signs of shock early.

Premedication

Provide analgesia as prescribed, example Pethidine 50-100mg to prevent shock.

Physical Preparation

- Catheterize patient and maintain intake and output chart
- Trim and clean the abdomen and vulva.
- Keep nil orally and insert a Naso Gastric Tube to for continuous drainage of abdominal contents
- Monitor and assess vital signs for signs of shock such as, hypotension, cold clammy skin, restlessness, pallor, tachycardia, hypovolaemia, and vomiting, and take appropriate action.
- Urinalysis to rule out other infections.
- Obtain a consent form and let the woman or her support person sign in your presence as a witness after they have understood what the gynaecologist has explained to them regarding the diagnosis, nature of operation, expected outcome and possible risk if operation is not done urgently.
- Remove any dentures, jewellery and wrist watch and keep away any variables for the patient and lock them up.

- Gown the patient and put an identification band on her wrist which should have her name, age, file number, diagnosis, nature of the operation, date and the ward.
- Stay with the patient while waiting for the doctor/theatre nurse to hand over the patient.

Psychological Care

- This woman will undergo grieving process for the loss of pregnancy hence the need to give her emotional and psychological care
- Give psychological support to allay anxiety and involve significant others in the care of the woman.
- Reinforce the doctors' explanation on the diagnosis, kind of operation and outcome
- Encourage the woman to verbalize her concerns and ask questions.
- Answer honestly or refer the questions to the highest authority if you are not able to explain. This is done to relieve tension due to worries

Post operative care

Immediate care

- Prepare a post-operative bed and a tray beside the bed. Drip stand, suction machine and oxygen, should the patient be in need of it.
- Day 0 post-operatively, patient is kept nil orally and maintained on intravenous fluids, 3 litres in 24 hours. Give the prescribed analgesia, usually pethidine 100mg 8 hourly intramuscularly.
- Administer the prescribed antibiotics, Gentamycin 80mg 3 times daily intravenously, Benzyl penicillin 2mega units 4 times daily intravenously and metronidazole 500mg intravenously, 3 times daily.
- Maintain strict intake and output chart.
- Vital signs are monitored quarter hourly in the 1st hour post operatively, half hourly for the next 2 hours , hourly for the next 2 hours ,then 2 hourly and graduate to four hourly as condition improves.

Subsequent Care

Environment

The nurse is nursed in a quiet, clean, well ventilated room, free from disturbance. Accord her maximum privacy to maintain self esteem and enable her to have adequate rest.

Nutrition

Oral fluids are allowed after confirming presence of bowel sounds. On day two semi-solid foods are given. By the third day the patient is given a normal diet.

Psychological Care

The woman and her family will need psychological and emotional care during this difficult time. The woman may undergo grieving process for the loss of the pregnancy. Thus, encourage her to verbalize and express her emotions without restrictions. Introduce women who have had that experience before to help her with the coping mechanism. Allow support person to be with her.

Observations

Monitor vital signs, blood pressure, pulse; respirations are done 4 hourly to rule out shock and temperature is done 6 hourly to rule out infection. Monitor urine output and test every specimen for Human Chorionic Gonadotrophic hormone, glucose to rule out Diabetes Mellitus, protein to rule out hypertension. Observe for the presence of vaginal bleeding and its colour, amount, odour, and consistency. Monitor incision site for oedema, bleeding, gapping or seepage of serum. Observe the abdomen for distension or tenderness.

Hygiene

Encourage the patient to have big bath for personal hygiene and early ambulation after removing the dressing

Elimination

If able to, allow mother to go to the toilet after the catheter has been removed and the drip is clamped.

Medication

Triple antibiotics are prescribed to prevent infection and analgesics for pain. Haematemics are given to combat anaemia

Complications of ectopic pregnancy

- Sub-infertility as a result of only having one functional tube

- Hypovolaemic shock due to bleeding the comes from the ruptured tube
- Sepsis due to infection after rupture or post-operatively
- Peritonitis due to accumulation of the fluids in the peritoneum as a result of rupture.
- Recurrence of the ectopic pregnancy due to the narrowing of the affected tube

Self-assessment questions

1. Ectopic pregnancy is defined as the implantation of pregnancy in the fallopian tube, uterus, abdomen and cervix. **True or False (encircle the correct response)**
2. At which portion of the placenta has a high likelihood of tubal implantation……..
3. Which is the more serious condition the nurse should look for and correct when there is a rupture of ectopic pregnancy……..
4. Mention the two classifications of ectopic pregnancy (i)……(ii)……..
5. If the ectopic pregnancy is not ruptured, there is no cause for worry. **True or False (encircle the correct response)**

Answers

1. False
2. Ampulla
3. Shock
4. (i) Ruptured (ii) Un-ruptured
5. False

3.13 Management of a Client with Vulvo-Vaginal Infections

You have finished discussing the management of a client with ectopic pregnancy. You will now welcome you to yet another exciting gynaecological topic about vulvo-vaginal infections. In this topic, you are going to learn about the management of a client with vulvo-vaginal infections. You may wish to know many women experience uncomfortable, vaginal infections (vaginitis) at one time or another. The area around the entrance to the vagina (vulva) can also become irritated. Steps can be taken to relieve and prevent vulvar discomfort and vaginal infections.

This information has been prepared to provide you with general tips for maintaining a healthy vulva and vagina. Not all vaginal infections are alike and home treatments can worsen some types.

The vulva and vagina

The vulva is the area of female sex organs that lies outside of the vagina. These organs include folds of sensitive tissue called the "labia" (labia means "lips"). There are two sets of labia. The outermost folds are called the *labia majora.* A second set of folds, called the *labia minora,* is enclosed within the labia majora. The vulva also contains the mounded area made by the pubic bone *(mons pubis),* a small, round organ *(clitoris),* and the openings of the vagina and urinary canal *(urethra).* The vagina is the passageway that extends from outside of the body to the uterus (womb).

Vaginal infections and vulva care

Vaginal infections occur when bacteria, fungi or other organisms grow uncontrolled. Some of these organisms already live in the vagina and are kept at healthy levels by coexisting with other organisms. Infectious organisms can also be introduced into the vagina by improper hygiene or unsafe sex.

Vulva Care

The goal of vulvar care is to keep the vulva dry and free from irritants. In this way, you can prevent the vulva from becoming red, swollen and irritated. Because many infections are introduced into the vagina, these tips also provide a basis for good, vaginal care.

Tips for vulva care

The general care of the vulva should follow the following tips below;

- Use only warm water to wash the vulva. Dry thoroughly with a clean towel. (If the vulva is very irritated, advise the client to try drying it with a blow dryer set on cool.)
- The vagina cleanses itself naturally in the form of normal, vaginal discharge. Avoid using douches unless prescribed by the physician or obstetrician. These products can upset the natural balance of organisms.
- Wear only *white,* 100 % cotton underwear. Avoid wearing nylon, acetate, or other manmade fibers.
- The client should avoid wearing thongs.
- Rinse underclothes carefully after washing. Or, double-rinse.
- Wash new underclothes before wearing.
- Use a mild soap (such as Woolite®) for washing underclothes. Do not use detergents (especially Tide) or fabric softeners (including dryer sheets.)
- Use soft toilet tissue (white only).
- Use tampons instead of sanitary napkins to control menstrual bleeding. (Do not use deodorant tampons.) Do not leave tampons in for a long period, due to toxic shock syndrome. Do not leave tampons in all night.
- Take Aveeno® sitz baths daily, if prescribed by the health care provider.
- Do not scratch the vulva.
- Avoid wearing nylon pantyhose or panty girdles. They trap heat and moisture, providing an ideal breeding environment for organisms. When nylons or leggings are required, wear cotton or nylons with a cotton panty.
- Avoid these feminine hygiene products, which can irritate the vulva: sanitary pads, feminine spray and deodorants, Vaseline®, oils, greases, bubble baths, bath oils, talc, or powder.

Common vaginal infections

Vaginal infections occur when bacteria, fungi or viruses grow in and around the vagina.

Certain types of bacteria live naturally inside your vagina. They produce acid to help fight off other bacteria, viruses and fungi that do not normally live in your vagina.

Vaginal infections are common. For example, around three-quarters of women will have thrush in their lives.

The common vaginal infections include

1. Candidiasis (thrush)
2. Bacterial vaginosis
3. Trichomoniasis
4. Chlamydia
5. Gonorrhoea
6. Genital Herpes

7. Genital warts. (condylomata Acuminata)

Symptoms of vaginal infections

It's normal and healthy for a woman of childbearing age to have vaginal discharge. The amount and colour of the discharge can change during your menstrual cycle, sexual excitement and pregnancy.

Symptoms of a vaginal infection include:

- Unusual vaginal discharge (this may be unusual in colour and smell unpleasant)
- Irritation and soreness of the vulva (the skin around the outside of your vagina)
- Vaginal itching
- Pain during sex
- Bleeding between periods or after sex
- Abdominal (tummy) pains
- Lumps, redness, swelling, blisters or ulcers on the vulva or anus
- Pain when passing urine

Causes of vaginal infections

Certain types of bacteria and fungi live naturally inside the vagina. When a woman have a vaginal infection, some bacteria or fungi grow more than usual, while others, that keep the vagina healthy, grow less. Many factors such as hormonal changes, stress, or even using soap to clean your genital area are thought to upset the levels of bacteria and fungi in the vagina.

A foreign object, such as a forgotten tampon, can also encourage bacteria to grow and cause an infection. Rarely, it can produce a life-threatening complication known as toxic shock syndrome.

Vaginal infections can also be caused through unprotected sexual intercourse or skin-to-skin contact. These are known as sexually transmitted infections (STIs).

Types of vaginal infections

The main types of common vaginal infection are described below.

Thrush

Around half of women have *Candida albicans* growing harmlessly in their vagina. A change in your vaginal environment can mean the yeast grows more than usual, causing thrush (vaginal candidiasis).

Common triggers for thrush include:

- Pregnancy
- antibiotics
- Diabetes

Other factors linked to thrush include using perfumed soaps or feminine hygiene sprays, taking the combined contraceptive pill and wearing tight underwear or clothes.

Bartholins Abscess

Bartholin's abscesses occur when the Bartholin's glands, located on either side of the opening of the vagina, become obstructed and infected. The Bartholin's glands, each about the size of a pea provide lubrication to the vaginal membranes. Bacteria that get into the gland can cause an infection, swelling, and an obstruction. If the gland becomes blocked, a cyst will form first. If the cyst becomes infected, it can lead to a Bartholin's abscess. It may take years for fluid to build up enough to form a cyst, but an abscess will make itself known right away .The abscess cause extreme pain. Most Bartholin's abscesses end with a full recovery but there is chance that the condition can recur.

Definition

Bartholin abscess is the build up of pus that forms a lump (swelling) in one of the Bartholin glands. These glands are found on each side of the vaginal opening.

Causes

A Bartholin abscess forms when a small opening (duct) from the gland gets blocked. Fluid in the gland builds up and may become infected. Fluid may build up over many years before an abscess occurs.

- Bacteria such as *E. coli*
- Sexually transmitted infections (STIs) such as chlamydia or gonorrhoea

Often the abscess appears quickly over several days. The area will become very hot and swollen. Activity that puts pressure on the vulva, and walking and sitting, may cause severe pain.

Symptoms

- A tender lump on either side of the vaginal opening
- Fever
- Pain with sexual intercourse
- The area is likely to be red

Diagnosis

- Pelvic examination - the Bartholin gland will be enlarged and tender.
- A biopsy may be done in to look for a tumour,
- Any vaginal discharge or fluid drainage is sent to the laboratory for culture.

Treatment

Treatment Options for a Bartholin's Abscess

- **Sitz baths - it** may take several days to treat the abscess with sits bath because the opening of the Bartholin's gland is very small and it may close before drainage is complete. Although soaking may not be the most effective cure, a sitz bath can soothe the pain and discomfort. Three or four sitz bath may be done in a day, for at least 10 to 15 minutes each.
- If the abscess is very large, your doctor may decide it best to **drain it surgically**. This procedure can be performed either under local anaesthesia or general anaesthesia.
- During the surgery, an incision is made in the abscess and a catheter is placed inside to drain the fluid. The catheter may remain in place for several weeks. Once the abscess has healed, the catheter is removed.
- Since the abscess is likely to be as a result of an infection, antibiotics are prescribes but in some cases antibiotics are not required if the abscess is properly drained. It is important to avoid sexual intercourse until the catheter is removed.

Prognosis

The chance of a full recovery is excellent. It is also important to treat any vaginal infection that is diagnosed at the same time as the abscess.

Vaginitis

Vaginitis is an inflammation of the vagina that can result in discharge, itching and pain. The cause is usually a change in the normal balance of vaginal bacteria or an infection. Vaginitis can also result from reduced estrogen levels after menopause.

The most common types of vaginitis are:

- Bacterial vaginosis, which results from overgrowth of one of several organisms normally present in the vagina
- Yeast infections, which are usually caused by a naturally occurring fungus called Candida albicans
- Trichomoniasis, which is caused by a parasite and is commonly transmitted by sexual intercourse
- Vaginal atrophy (atrophic vaginitis**),** which results from reduced estrogen levels after menopause

Symptoms

The signs and symptoms for vaginitis may include:

- Change in colour, odour or amount of discharge from the vagina
- Vaginal itching or irritation
- Pain during sexual intercourse
- Painful urination
- Light vaginal bleeding or spotting

The characteristics of vaginal discharge may indicate the type of vaginitis you have. Examples include:

- Bacterial vaginosis. You may develop a greyish-white, foul-smelling discharge. The odour, often described as fish-like, may be more obvious after sexual intercourse.
- Yeast infection. The main symptom is itching, but you may have a white, thick discharge that resembles cottage cheese.
- Trichomoniasis. An infection called trichomoniasis (trik-o-moe-NIE-uh-sis) can cause a greenish yellow, sometimes frothy discharge.

Bacterial Vaginosis (BV)

Bacterial vaginosis (BV) is caused when bacteria living naturally inside the vagina grow more than usual (for example, *Gardnerella vaginalis*). It's the most common cause of vaginal discharge in women of childbearing age. The vaginal discharge is usually thin and grey with a fishy smell. Sometimes the fishy odour only occurs after sex, when vaginal secretions are mixed with semen.

Possible triggers of Bacterial Vaginosis include:

- Perfumed soaps, feminine hygiene sprays or vaginal douching
- Having an intra-uterine system (ius or coil)
- Antibiotics

BV is not a STI, although there may be a link with having a new sexual partner or a high number of sexual partners. If left untreated, BV may increase your risk of:

- Pelvic inflammatory disease (PID) after giving birth or having an abortion
- Miscarriage
- Premature labour
- Having a low birth-weight baby

Trichomoniasis

Trichomoniasis is caused by a parasite called *Trichomonas vaginalis*. This is usually transmitted during unprotected sexual intercourse.

Symptoms of trichomoniasis include a heavy, sometimes frothy, yellow-green, fishy-smelling vaginal discharge. However, half of women with trichomoniasis do not have any symptoms.

If left untreated, trichomoniasis infection may increase one's risk of:

- Becoming infected with viruses including Human Immunodeficiency Virus **(HIV) and** Human Papilloma Virus (HPV)
- Premature labour or having a low birth-weight baby

Chlamydia

Chlamydia is one of the most common Sexually Transmitted Infections. It is caused by a bacterium called *Chlamydia trachomatis*.

Many people have chlamydia without knowing it. Seven in 10 women and half of men with chlamydia do not have any symptoms.

In women, chlamydia infection can spread to your womb (uterus), ovaries and fallopian tubes and cause PID. Up to three women in 10 with untreated chlamydia will get PID. PID can damage the fallopian tubes and can increase the risk of:

- Ectopic pregnancy
- infertility
- Chronic pelvic pain

Gonorrhoea

Gonorrhoea is caused by a bacterium called *Neisseria gonorrhoea*, which is passed on during unprotected sexual intercourse.

Symptoms of gonorrhoea usually appear within two weeks of infection, and may include:

- Vaginal discharge
- Pain when passing urine
- Bleeding between periods
- Pelvic or abdominal pain
- Pain during sex

However, half of women with gonorrhoea do not have any symptoms.

Genital herpes

Genital herpes infection is caused by the herpes simplex virus (HSV) being passed on during sexual contact. Once infected, HSV stays in the body for the rest of one's life.

Symptoms of genital herpes include:

- Painful blisters
- Pain when passing urine
- Discharge
- Fever
- Tiredness

Genital warts (condylomata acuminata)

Genital warts are the most common sexually transmitted viral infection in most parts of the world, and are especially common in people under the age of 25.

Genital warts are caused by HPV, which makes cells grow unusually. You can catch genital warts by having sex and/or skin-to-skin contact with someone who has them.

Genital warts appear as small, round lumps on or around your vulva, upper thighs, cervix, vagina or anus. It can take several months or even years after infection for the warts to appear. However, many people with the virus do not develop warts and you may not know you have the infection.

Diagnosis of vaginal infections

There are different ways to test for a vaginal infection. The client may be asked to provide a sample of urine. A doctor or nurse may look inside the vagina using a speculum (which is also used for smear tests) and take a swab (similar to a small, round cotton bud). The swab picks up a sample of cells from your vagina. These samples may be tested or examined under a microscope in the clinic, as well as being sent to a laboratory for testing.

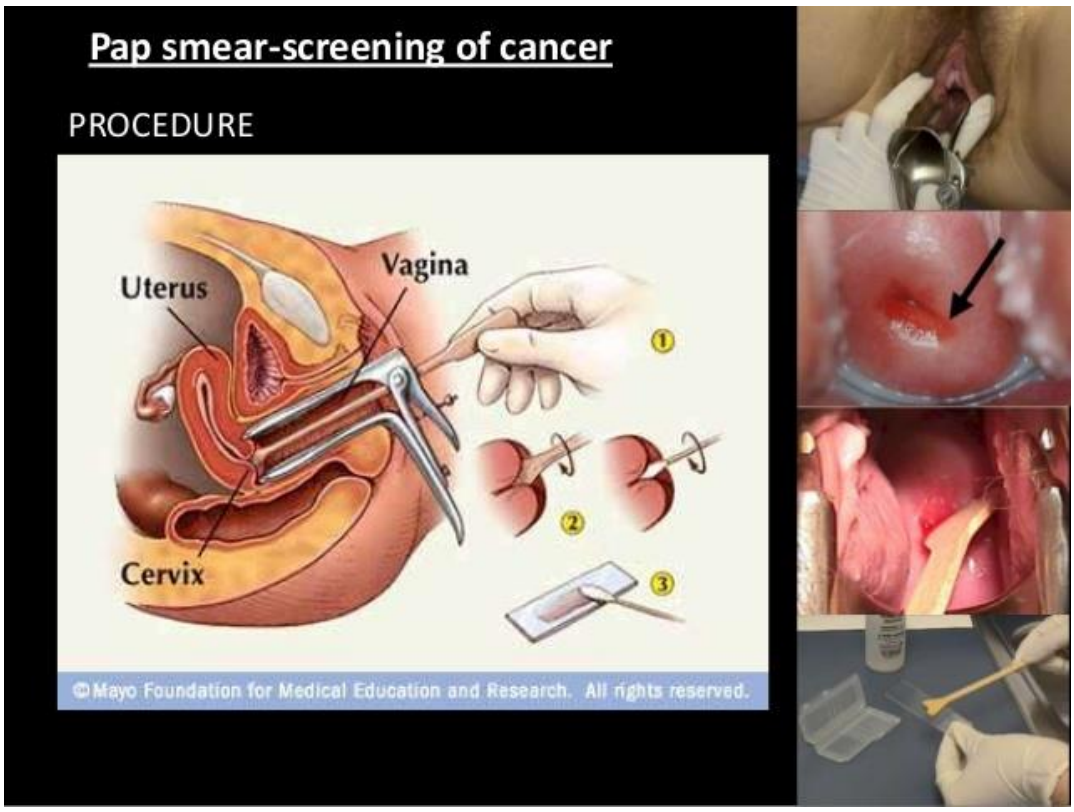


Figure 19: Pap smear-screening of cancer

Treatment of vaginal infections

Some treatments are available from your pharmacist as well as on prescription from the doctor. Always read the patient information leaflet that comes with the medicine.

Thrush

Most infections respond to antifungal treatments such as clotrimazole cream or pessaries (a medicine you put directly into the vagina), or fluconazole tablets, which are available from your pharmacist without prescription. The infection clears up completely in most women. If the client is pregnant, she should see the doctor before taking any medicines to treat thrush.

If the symptoms do not improve within seven to 14 days or symptoms come back, the client should be advised to return to the doctor. He or she may prescribe a different antifungal medicine. Male partners do not need treatment unless they have a rash or a sore penis.

Bacterial Vaginosis (BV)

Antibiotic treatment clears BV infection in most women. Antibiotics are usually given in tablet form although sometimes, especially in pregnancy, the doctor will prescribe a gel or cream. Male sexual partners do not need treatment.

Trichomoniasis

Trichomoniasis can sometimes get better without treatment, but the doctor will usually prescribe antibiotics. The client can take antibiotics as a course of tablets for five to seven days or as a one-off large dose. Sexual partners need to be treated too as symptoms are less common in men and they may not know they are infected.

Chlamydia and gonorrhoea

Both chlamydia and gonorrhoea infections are treated with antibiotics.

The client will be given antibiotics as a one-off dose, or for chlamydia a week-long course. Sexual partners need to be treated too as symptoms are less common in men and your partner may not know he is infected.

Genital warts

Treatment depends on where the warts are, what they look like and how many the client may have. The woman may be given creams or liquids, surgery, cryotherapy (a freezing procedure) or laser treatment.

Some women find that the warts go after one treatment, whereas others need several treatments.

Genital herpes

Anti-retroviral tablets will be prescribed to stop the herpes from multiplying but do not cure the infection. You need to take them for at least five days.

The client may also need to use a local anaesthetic ointment on the vulva to help with the pain.

For sexually transmitted infections (STIs) like chlamydia, gonorrhoea and trichomoniasis, the client will be tested again a couple of weeks after she has finished her treatment to ensure that the infection has gone completely.

If a woman has been diagnosed with an STI, it's important for her to contact her previous partners who may be at risk, to prevent them from spreading the infection to others.

Prevention of common vaginal infections

Chlamydia, gonorrhoea, trichomoniasis, genital warts and herpes are passed on by skin-to-skin contact, such as during sexual intercourse without a condom. A condom provides good protection against many STIs, but genital warts and herpes may still be passed on by contact with skin that is not covered with a condom.

Self Test Questions

For each of the following, indicate True or False (T/F)

1. The symptom of genital Herpes is vaginal discharge.
2. Consistent condom use would help prevent some vulvo-vaginal infections.
3. Treatment of genital warts is cryotherapy.
4. Both gonorrhoea and chlamydia are treated by antifungal medications.
5. Sexual partners to the client with vaginal infections should also be treated.

Answers

1. F
2. T
3. T
4. F
5. T

3.14 Management of Clients with Pelvic Infections

Welcome to lesson 3.13, in this lesson we shall discuss infections that affect the pelvic cavity of the woman. The structures affected include the cervix, uterus, fallopian tubes, ovaries and pelvic peritoneum. Infections of these parts are termed as pelvic inflammatory disease (PID). This condition is referred to as silent when the woman does not perceive any symptoms.

The infection may be acute, sub acute, recurrent or chronic infectious condition. Infections of the pelvic cavity may complicate to conditions such as pelvic peritonitis and pelvic abscess.

Pelvic Inflammatory disease is an acute, sub acute, recurrent or chronic infectious condition of the pelvic cavity that involve infection of the fallopian tubes (salpingitis), ovaries (oophoritis), cervix (cervicitis), uterus (endometritis) and pelvic peritoneum (peritonitis) characterized by severe lower abdominal pain and copious foul smelling vaginal discharge.

- **Causes of PID**

PID can result from infection with aerobic or anaerobic organisms. The most important single agent causes of PID include Chlamydia trachomatis and Neisseria gonorrhoea (Hacker et al, 2004).

Endogenous aerobic bacteria include;

- E. Coli
- Klebsiella
- Proteus
- Streptococcus species

Endogenous anaerobes bacteria include;

- Bacteroides

- Peptostreptococcus and peptococcus
- Mycoplasma hominis
- Actinomycetes

Predisposing factors to PID

- Age- sexually active women below 25 years- Women under-25 years of age are more likely to suffer from PID than those above 25 years due to immature cervix.
- Multiple sexual partners- due to risk of STI.
- Infections from other organs for example peritonitis ruptured pelvic abscess.
- History of Chlamydia or gonorrhoea infection
- Sexual intercourse with more partners
- Vaginal douching- it changes vaginal flora and predisposes to harmful organisms.
- Direct infection for example post abortal sepsis, puerperal sepsis
- Post surgical procedures for example dilatation and curettage, insertion of intra uterine contraceptive device (IUD) insertion or use that is, Loop, biopsy of endometrium. hystero- salpingectomy, laparoscopy among others
- Spread from other organs through the blood stream for example appendicitis

Pathophysiology

The pathogenic organisms are usually introduced from outside the body and pass up the cervical canal into the uterus. The common causative organisms include gonococci, chlamydiae, Haemophilus and streptococci. The causative organisms invade the pelvis by way of the fallopian tubes or through the uterine veins or lymphatics.

Many of the pathogens lodge in the fallopian tubes and create an acute or chronic inflammatory reaction.

Purulent material collects in the tubes which lead to patient experiencing severe abdominal pain, lower abdominal cramping, intermenstrual bleeding, dyspareunia, fever and chills, malaise, nausea and vomiting manifested in acute PID. A sensation of pelvic pressure and back pain may also be present

A foul smelling vaginal discharge is copious and commonly purulent and may cause pruritis and excoriation. The infection usually remains localised in the lower abdomen and pelvis, although abscesses may form.

Masses may be felt, indicating enlargement of the fallopian tubes or ovaries or the presence of an abscess. However, it is also possible to be asymptomatic and have normal laboratory values.

As healing takes place it may heal by fibrosis, adhesions and strictures form; and sterility, one of the most serious consequences of PID may occur due to the reduced lumen of the tube.

Partial obstruction of the tubes may predispose a woman to ectopic pregnancy because the fertilized ovum cannot reach the uterus

Inflammatory adhesions become so severe that surgical removal of the uterus, tubes, and ovaries may be necessary.

Signs and Symptoms

Symptoms of PID vary from none to severe. When PID is caused by chlamydial infection, a woman may experience mild symptoms or no symptoms at all, while serious damage is being done to her reproductive organs.

Because of vague symptoms, PID goes unrecognized by women and their health care providers

- Abnormal heavy and purellent vaginal discharge
- Low abdominal pain lateral or unilateral (often of a mild, aching nature). Pain may also be experienced just before or during menstruation.
- Irregular uterine bleeding
- Fever and chills (high temperature and Tachycardia)
- Painful urination
- Nausea and vomiting
- Painful sexual intercourse
- Puritis of the vagina
- General body malaise
- Cervical motion tenderness
- Occasional diarrhoea
- Muco purulent cervicitis
- On VE extreme tenderness in the fornices.
- Abdominal mass may be felt on the abdomen on palpation

Management

Investigations

- Tests commonly used to diagnosis PID include:
- History is significant because PID is commonly associated with recent sexual intercourse, IUD insertion, childbirth (puerperal sepsis), or abortion.
- High vaginal swab for culture and sensitivity to rule out chlamydial and gonococci infections. Culture and sensitivity testing aids selection of the appropriate antibiotics. Urethral and rectal secretions may also be cultured.
- Ultrasonography or computed tomography scanning- to identify an adnexal or uterine mass. (X-rays seldom identify pelvic masses.)
- Culdocentesis- to obtain peritoneal fluid or pus for culture and sensitivity testing.
- Laparoscopy - surgical procedure in which a thin, rigid tube with a lighted end and camera (laparoscope) is inserted through a small incision in the abdomen.
- Hysterosalpingography- radiographic examination of the uterus and uterine tubes after injection of a radio-opaque dye.
- Blood chemistry

-WBC will be raised

- ESR will be raised due to presence of infection in blood
- Haemoglobin estimation

Medical treatment

PID can be cured with several types of antibiotics. However antibiotics are prescribed according to culture and sensitivity and severity of condition. Because of the difficulty in identifying organisms infecting the internal reproductive organs and because more than one organism may be responsible for an episode of PID, it is usually treated with at least two antibiotics that are effective against a wide range of infectious agents. These antibiotics can be given by mouth or by injection

In patient treatment

Regimen A

- Cefoxitin 2g IV every 6 hours or Cefotetan 2g IV every 12 hours, plus
- Doxycycline 100mg IV 12 hourly until improved, followed by doxycycline 100mg orally bid, to complete 14 days

Regimen B

- Clindamycin 900mg IV every 8 hours plus,
- Gentamycin 2mg/kg IV once, followed by 1.5 mg/kg IV 8 hourly until improved, followed by Doxycycline 100mg orally bid, to complete 14 days.

Out patient treatment

Regimen A

- Ofloxacin 400mg orally bid for 14 days, OR
- Levofloxacin 500mg every day for 14 days with or without,
- Metronidazole 500mg bid orally for 14 days

Regimen B

- Ceftriaxone 250 mg IM single dose, OR
- Cefoxitin 2 g IM single dose and probenecid 1 g orally,
- Plus,
- Doxycycline 100mg bd, to complete 14 days with or without,
- Metronidazole 500mg orally bid for 14 days

Analgesics

- Analgin
- Pethidine

Sedatives

- Valium 5-10mg

Indications for hospitalization

Hospitalization to treat PID may be recommended if the woman;

- Is severely ill (for example, nausea, vomiting, and high fever)

- Is Pregnant
- Does not respond to or cannot take oral medication and needs intravenous antibiotics
- Has an abscess in the fallopian tube or ovary (tubo-ovarian abscess)
- Needs to be monitored to be sure that her symptoms are not due to another condition that would require emergency surgery (for example, appendicitis).

Nursing care

Isolate patient depending on cause

Environment

- Should be warm, clean and well ventilated
- Linen should be protected with mackintosh and draw sheet.

Rest and position

- Flowler's position to facilitate drainage
- Quite place to promote rest
- Ensure comfort of patient by doing procedures in blocks

Control of pain

- Proper positioning of patient and support with pillows
- Heat applied to the abdomen may be comforting.
- Diversional therapy
- Give prescribed antibiotic

Observation

- TPR 2-4 hourly and Bp check
- Check for fever. If it persists and do measures to control temp (open nearby windows, give cold drink, remove extra clothing among others)
- Carefully monitor fluid intake and output, watching the patient for signs of dehydration.
- Observe vaginal discharge for amount and colour

Watch for abdominal rigidity and distention, possible signs of developing peritonitis.

Nutrition

- IV infusion and NG feeding if very ill
- Encourage adequate oral fluids about 2000ml of fluids daily is recommended to avoid constipation.
- Encourage a high protein , high calorie diet and roughage in the diet to aid in healing and prevent constipation

Hygiene

- Daily bed bath or big bath depending on its condition but tub or sitz baths should be avoided during active infection.

- Change of sanitary pads PRN
- Provide frequent perineal care if vaginal drainage occurs every 3 to 4 hours and maintain scrupulous hygiene after urination and defecation.
- Washing of hands
- Limiting visitors
- Elimination
- Encourage patient to micturate even when it is painful and to open bowels to prevent constipation.

Psychological care

- Alley anxiety
- Let the patient express fear and ask questions
- Explain disease process
- Be empathetic and show understanding
- Involve spouse and family
- Reassure patient
- Involve patient in her care

Health education

- Advise to seek early treatment of STIs, and treatment of both partners and also to seek medical advice if complications occur.
- Encourage to adhere to prescribed therapy in order to aid in recovery.
- Encourage to have a diet rich in proteins, carbohydrates, vitamins, roughage and plenty fluids in order to prevent constipation as well as aid in recovery.
- Advise to abstain from sexual intercourse for 3 weeks in order to promote full recovery.
- Advise to come for review when due for check-up.
- Encourage to observe good hygiene for example hand washing before and after handling body
- Encourage rest which aids in healing

Complications

- Infertility- If the fallopian tubes are totally blocked by scar tissue, sperm cannot fertilize an egg, and the woman becomes infertile. Infertility also can occur if the fallopian tubes are partially blocked or even slightly damaged the sperm can pass through the stricture but the fertilized ovum cannot reach the uterus.
- Ectopic pregnancy- a partially blocked or slightly damaged fallopian tube may cause a fertilized egg to remain in the fallopian tube and begins to grow.
- Chronic pelvic pain- Scarring in the fallopian tubes and other pelvic structures can cause chronic pelvic pain
- Tubo-ovarian abscess- If the first or subsequent episodes of inflammation are not adequately treated then the condition can become chronic and abscesses can form in the pelvis.
- Peritonitis- extension of the PID infection into the peritoneal cavity.
- Septic shock **–** This is due to flooding of bacterial endotoxins from the infected area.

Prevention

- Early recognition of symptoms and prompt treatment of vaginal and cervical infections.

- Provide adequate information about factors that place a woman at increased risk of PID for instance having multiple sexual partners.
- Women should be encouraged to seek medical attention for any unusual vaginal discharge or to seek attention for any possible infection of their reproductive organs
- The surest way to avoid transmission of STDs is to abstain from sexual intercourse, or to be in a long-term mutually monogamous relationship with a partner who has been tested and is known to be uninfected.
- Latex male and female condoms, when used consistently and correctly, can reduce the risk of transmission of chlamydia and gonorrhoea.
- CDC recommends yearly chlamydia testing of all sexually active women age 25 or younger, older women with risk factors for chlamydial infections (those who have a new sex partner or multiple sex partners), and all pregnant women.
- Treating STDs early can prevent PID. Women who are told they have an STD and are treated for and should notify all of their recent sex partners so they can see a health care provider and be evaluated for STDs.
- Sexual activity should not resume until all sex partners have been examined and, if necessary, treated.
- Compliance to treatment is very important

Cervicitis

Cervicitis- is the inflammation of the cervix (this is the neck and outlet of a woman's uterus). it is a common infection of the lower genital tract.

Inflammation may be caused by infection from certain sexually transmitted diseases (STDs) or by injury to the cervix from a foreign object inserted into the vagina, from birth control devices such as the cervical cap or a diaphragm, or by cancer.

If untreated, cervicitis may lead to pelvic inflammatory disease, infertility, ectopic pregnancy, chronic pelvic pain, spontaneous abortion, cervical cancer, or other complications during the delivery of a baby.

Cervicitis is a very common condition. In fact, more than half of all women may develop cervicitis at some point in their adult lives.

Cervicitis Causes

- A vaginal infection or a sexually transmitted disease such as gonorrhoea, Chlamydia, and trichomoniasis can cause cervicitis.
- HIV, infection with the herpes virus (genital herpes), and human papillomavirus (HPV, genital warts) are additional STIs that put you at risk for developing cervicitis.
- Having sexual relations at an early age or engage in high-risk sexual behaviour with many partners or have a history of sexually transmitted diseases.
- Injury or irritation (a reaction to the chemicals in douches and contraceptives or a forgotten tampon) also can cause the disease. The objects may simply cause irritation and make the cervix more susceptible to infection.
- An allergy to contraceptive spermicides or to latex in condoms that leads to cervicitis.
- Infections are much more often responsible for cervicitis than non-infectious causes. Cervicitis Symptoms

Signs and symptoms

In the mildest form of cervicitis, you may not notice any symptoms at all. When they occur they include:

- Vaginal discharge that becomes more pronounced immediately following menstrual period.
- Vaginal bleeding
- Itching
- Irritation of the external genitals
- Pain during intercourse
- Bleeding or spotting after sexual intercourse or between periods
- A burning sensation during urination
- Lower back pain or pain low in the abdomen, sometimes felt only during sexual intercourse
- A more severe case of cervicitis can cause a profuse, almost pulse like, discharge with an unpleasant odour, accompanied by intense vaginal itchiness or abdominal pain.
- If the infection spreads to other organs, you may also have fever, nausea, and abdominal pain.

Diagnosis

- History about the symptoms one is experiencing. Contraceptives uses, medications taken if any, sexual activity, last menstrual period, and whether you have been pregnant before and have given birth.
- Physical examination - inspection of the external genitalia for redness, swelling, or any signs of irritation or injury.
- An instrument called a speculum will be inserted into the vagina to hold the vaginal walls apart, permitting an inspection of the cervix and vaginal lining for redness, irritation, unusual discharge, or sores.
- Collection of a sample for a Pap smear by swabbing the cervix. The Pap test can be used to rule out the possibility of cervical cancer or precancerous changes.
- Complete bimanual or 2-handed examination. Two fingers of one hand are inserted into the vagina with the other hand pressing down on the abdomen. This procedure helps to determine the size and location of the uterus and cervix and to check for pain, tenderness, or any irregularity. This part of the examination produces pressure in the lower abdomen and pelvic area. With cervicitis, the pain is felt the cervix is moved from side to side.
- A biopsy (a sample of tissue is taken) might be recommended if the cervix appears abnormal.
- Colposcopy is a procedure that uses a binocular-like instrument to get a magnified view of the surface of the cervix.

Treatment of Cervicitis

Cervicitis caused by gonorrhoea and chlamydia is treated with antibiotics. Depending on the cause, you may be given antiviral agents, such as acyclovir (Zovirax), to treat genital herpes.

If the infection has become widespread, admission to the hospital may be necessary.

Cervicitis

Surgery

If symptoms continue after antibiotic therapy, the inflamed area of the cervix may be cauterized by electrocoagulation (heat), cryotherapy (freezing), or laser treatment to destroy the infected tissue though such therapies are rarely used because antibiotics are highly effective in treating cervicitis.

Complications of surgery

- Cervical stenosis (closed opening)
- Cervical incompetence (weak cervix that can open in pregnancy and lead to premature birth).

Prevention of Cervicitis

- Safe-sex practices.
- Limiting sexual contacts.
- Know your partner's sexual history.
- Make condoms a routine part of sex.
- Having a regular physical examination and Pap smear tests regardless of whether or not one is experiencing any symptoms, especially if they are sexually active.
- The sexual partner must be screened for STIs on a regular basis.
- Avoid chemical irritants in deodorized tampons, douches, or sprays.

Bottom of Form

Salpingitis

Salpingitis is inflammation of the fallopian tubes. The fallopian tubes extend from the uterus, one on each side, and both open near an ovary.

Almost all cases of salpingitis are caused by bacterial infection, including sexually transmitted diseases such as gonorrhoea and chlamydia. The inflammation prompts extra fluid secretion or even pus to collect inside the fallopian tube. Infection of one tube normally leads to infection of the other, since the bacteria migrates via the nearby lymph vessels.

Salpingitis is one of the most common causes of female infertility. Without prompt treatment, the infection may permanently damage the fallopian tube so that the eggs released each menstrual cycle can't meet up with sperm. Scarring and blockage of the fallopian tubes is the most frequent long-term complication of pelvic inflammatory disease (PID) and so this condition can sometimes be referred to as PID. However, the umbrella term of PID includes other infections of the female reproductive system, such as the uterus and ovaries.

Types of salpingitis

Salpingitis can either acute or chronic.

Acute salpingitis, - the fallopian tubes become red and swollen, and secrete extra fluid so that the inner walls of the tubes often stick together. The tubes may also stick to nearby structures such as the intestines. In some cases, a fallopian tube may fill and bloat with pus. In rare cases, the tube ruptures and causes a dangerous infection of the abdominal cavity (peritonitis).

Chronic salpingitis - this usually follows an acute attack. The infection is milder, longer lasting and may not produce many noticeable symptoms.

Causes of salpingitis

In most cases of salpingitis, bacteria are the cause. Some of the bacteria responsible for salpingitis include:

- Chlamydia
- Gonococcus (which causes gonorrhoea)
- Mycoplasma
- Staphylococcus
- Streptococcus.

The bacteria gain access to the woman's reproductive system to cause infection through

- Sexual intercourse
- Insertion of an IUD (intra-uterine device)
- Miscarriage
- Abortion
- Childbirth
- Appendicitis

Take Note:

Having prior infection with a sexually transmitted disease and engaging in unprotected sexual intercourse increases the risk of having salpingitis.

Symptoms of salpingitis

In milder cases, salpingitis may have no symptoms. This means that the fallopian tubes may become damaged without the woman even realising she has an infection.
The symptoms may include:

Abnormal vaginal discharge, such as unusual colour or smell

Spotting between periods

- Dysmenorrhoea (painful periods)
- Pain during ovulation
- Uncomfortable or painful sexual intercourse
- Fever
- Abdominal pain on both sides
- Lower back pain
- Frequent urination
- Nausea and vomiting
- The symptoms usually appear after the menstrual period.

Diagnosis of salpingitis

Diagnosing salpingitis involves a number of tests, including:

- General examination - to check for localised tenderness and enlarged lymph glands
- Pelvic examination - to check for tenderness and discharge
- Blood tests - to check the white blood cell count and other factors that indicate infection
- Mucus swab - a smear is taken to be cultured and examined in a laboratory so that the type of bacteria can be identified
- Laparoscopy - in some cases, the fallopian tubes may need to be viewed by a slender instrument inserted through abdominal incisions.

Treatment for salpingitis

Treatment depends on the severity of the condition, but may include:

- Antibiotics - to kill the infection, which is successful in around 85 per cent of cases
- Surgery - if the condition resists drug treatment.

Complications of salpingitis

If salpingitis is not treated it can cause a range of complications. The complications include

- Further infection - the infection may spread to nearby structures, such as the ovaries or uterus.
- Infection of sex partners - the woman's partner or partners may contract the bacteria and become infected too.
- Tubo-ovarian abscess – some of the women with salpingitis develop an abscess,
- Ectopic pregnancy - a blocked fallopian tube prevents the fertilised egg from entering the uterus. The embryo then starts growing inside the confined space of the fallopian tube.
- Infertility - the fallopian tube may become deformed or scarred to such an extent that the egg and sperm are unable to meet.

Pelvic Oophritis

Oophritis is the inflammation of one or both ovaries. The inflammation usually occurs with salpingitis (infection of the fallopian tube),

Causes of Oophoritis

Oophoritis is generally caused by gonorrhoea or chlamydia bacteria that move from the vagina or cervix into the uterus, fallopian tubes and ovaries.

Symptoms of Oophoritis

- Pelvic pain
- Lower back pain
- Fever
- Side tenderness
- Tenderness on internal examination

Diagnosis

- Physical examination to check for oophritis and sexually transmitted diseases.
- Extracting samples of mucus and uterine tissue for laboratory analysis. Laboratory tests reveal the nature of a bacterial infection to confirm the diagnosis

Treatment

- In most cases, oral antibiotics are effective at clearing up an infection within a week. Women who experience severe pain may be admitted in order to administer the antibiotics intravenously.
- In rare cases where an infection destroys ovarian tissue, surgery is necessary to remove one or both ovaries

Pelvic Peritonitis

Pelvic peritonitis is generalised inflammation of the peritoneum surrounding the uterus and uterine tubes.
Peritonitis may be primary or secondary, septic and acute or chronic.

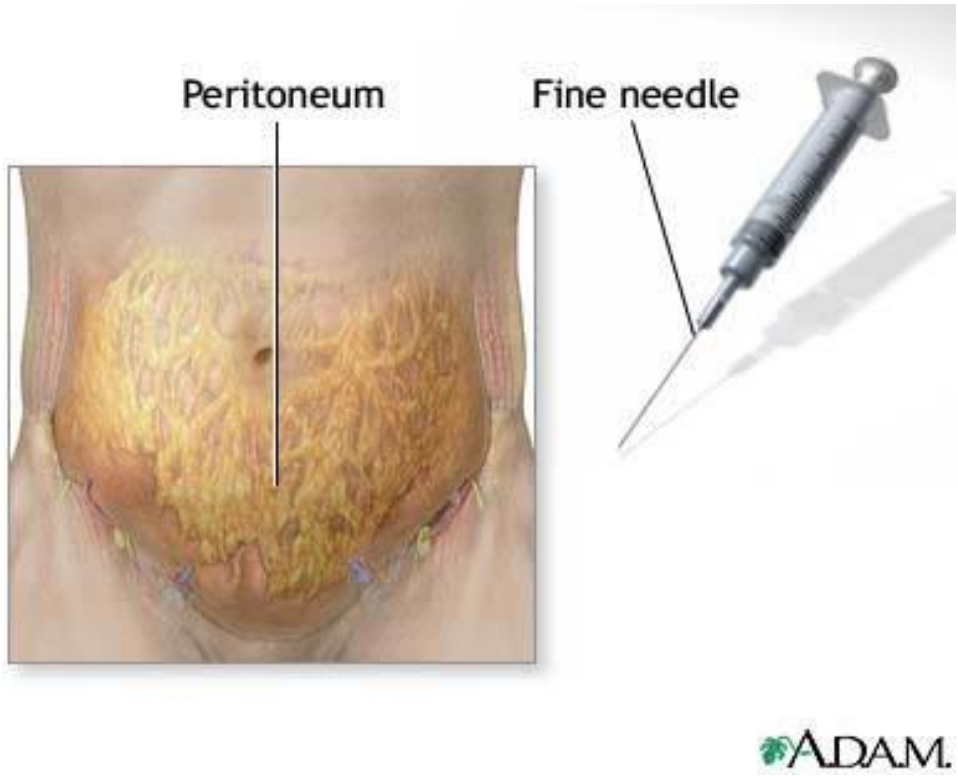
Causes/Etiology
Primary peritonitis

- Bacterial infection
- Blood borne organism
- Genital tract organism such asexually transmitted infection

Secondary peritonitis

- Trauma or rupture of an organ containing chemical irritants or bacterial leased into peritoneal cavity, includes:
    - Ruptured appendix
    - Perforated peptic ulcers
    - diverticulitis
    - Pelvic inflammatory disease
    - Urinary tract infection or trauma
    - Bowel obstructions and surgical complication

Pathophysiology
The peritoneal lining serves as a semipermeable membrane lining that allows the flow of water and electrolytes between blood stream and peritoneal cavity. When peritonitis occurs, fluid can shift into the abdominal cavity at a rate of 300 to 500mls/hr in response to acute inflammation. The bowel increasingly becomes distended with gas and fluids. The circulatory fluids and electrolyte changes can rapidly become critical. Local reaction of the peritoneum includes redness and inflammation and the production of large amounts of fluids that contains electrolytes and proteins. Hypovolemia, electrolyte imbalance, dehydration and finally shock can develop. The fluids become purulent as the condition progresses and as bacteria become more numerous. The bacteria also may enter the blood and cause septicemia.



Clinical Manifestation

- Abdominal pain is the most common
- Tenderness over the involved area
- Rebound tenderness
- Muscular rigidity
- Abdominal distention and ascitice
- Fever
- nausea
- vomiting

Diagnostic Studies

- Abdominal x-ray
- Abdominal paracentesis and culture of fluid
- CT scan or ultrasound
- Peritonoscopy

Management

The goal of management of peritonitis is to identify and eliminate the cause, combat infection, and prevent complications. General supportive measures such as vigorous intravenous rehydration and collection of electrolytes disturbances are done.

Antibiotics are usually administered intravenously. They can also be infused directly into the peritoneum.

Surgery (laparotomy) is needed to be performed for a full exploration and lavage (the process of washing out an organ, usually the bladder, bowel or stomach for therapeutic purposes) of the peritoneum as well as to correct any gross anatomical damage to structures.

Nursing management (laparotomy)

Preoperative care

- You should trim the hair of the patient in the abdominal area.
- The nurse should bath the patient and give them a theatre gown to wear.
- You should give the patient an enema or some other form of bowel preparation to help empty the bowels.
- The patient will be 'nil by mouth' (nothing to eat) for a number of hours beforehand.

Laparotomy procedure
A laparotomy is performed under general anaesthesia. The surgeon makes a large, single cut through the skin and muscle of the abdomen, so that the underlying organs can be clearly viewed. The exposed organs are then carefully examined. Once diagnosed, the problem may be fixed on the spot (for example, a perforated bowel may be repaired). In other cases, a second operation may be needed. Once the laparotomy is complete, the muscle of the abdominal wall and the overlying skin are sutured (sewn) closed.

Immediately after the operation
After the operation, you can expect:

- Check the patient's temperature, pulse, respiration; blood pressure and wound site carefully monitor the wound healing.
- The patient may have a drain inserted at the wound site.
- A small tube may have been passed through the patient's nose and into the stomach to help drain stomach secretions for a day or two. This rests the patient's digestive tract as it heals.
- A urinary catheter is inserted to drain off urine.
- You should give the patient intravenous fluids (directly into the vein), as patient may not be allowed to eat for a few days.
- Pain relief should be given regularly, as ordered by the doctor, to keep patient comfortable.
- As soon as possible, encourage the patient to do the deep breathing and leg exercises.
- Assist the patient out of bed the day after the operation (all going well). Early walking is important, as it reduces the risks of blood clots and chest infections.
- Give the patient daily wound care and do observation, along with advice on caring for the wound at home.
- Medication is usually given on discharge.

Complications
Before surgery
- Hypovolemic shock
- Septicemia
- Intra-abdominal abscess
- Formation of paralytic ileus and organ failure

Complications after surgery

- Haemorrhage (bleeding)
- Infection
- Damage to internal organs
- Formation of internal scar tissue (adhesions)
- Bowel blockages or abdominal pain, which may be caused by adhesions.

Information, Education and Communication to the Patient on Discharge

- Advise the patient to rest as much as possible for two weeks.
- Arrangements should be made for relatives or friends to help the patient around the house. Advice the patient to strictly avoid any heavy lifting, pulling or pushing.
- The patient may need a modified diet following discharge from hospital. Give all dietary suggestions to the patient.
- Ask the patient to make sure they take their medications and follow instructions precisely.
- Advise the patients to continue with exercises shown in hospital.
- Ask the patient to report to the doctor immediately if the wound becomes inflamed, tender or starts to discharge. These symptoms could indicate infection.
- Early recognition of symptoms and prompt treatment of vaginal and cervical infections.
- Provide adequate information about factors that place a woman at increased risk of PID for instance having multiple sexual partners.

- Women should be encouraged to seek medical attention for any unusual vaginal discharge or to seek attention for any possible infection of their reproductive organs

Pelvic Abscess

Pelvic abscesses in women may occur as part of pelvic inflammatory disease.

Causative organisms

Common organisms include *Neisseria gonorrhoea* and *Chlamydia trachomatis*.

Clinical features

- There may be urinary frequency
- Dysuria
- Diarrhoea or tenesmus due to irritation of the anatomically related organs

Investigations

Full blood examination

Urea and electrolytes

Liver function test

Blood cultures and other appropriate cultures (urine, sputum, and catheter) may also be performed.

Computed tomography (CT) scan with iodinated soluble oral contrast is useful. Serial images are obtained from the diaphragm to the pelvis. It is particularly useful for localising small or deep intra-abdominal abscesses (Computed tomography scan showing a pelvic abscess.).

Ultrasound useful to detect tubo-ovarian abscess complicating pelvic inflammatory disease in women

Laparoscopy is occasionally used if there is diagnostic uncertainty between a tubo-ovarian abscess and a phlegmon.

Treatment

Parenteral antibiotics

Parenteral antibiotics should be administered prior to drainage of the abscess. Initial choice of antibiotics is empirical but should provide a broad-spectrum activity against Gram-negative bacilli and anaerobes. Specific therapy is guided by the results of cultures. With adequate drainage of the abscess, it may not be necessary to treat each component of the polymicrobial flora. Commonly used antibiotics include metronidazole with a second- or third-generation cephalosporin or imipenem alone. Alternatively, combinations of amoxycillin, gentamicin and metronidazole provide additional cover against enterococci as well. In immunosuppressed patients, *Candida* species may have an important pathogenic role, and treatment with amphotericin B is indicated.

Percutaneous drainage

A diagnostic needle aspiration is initially performed to confirm the presence of the abscess and to obtain pus for Gram stain and culture. A largebore drainage catheter is then placed in the most dependent position. While percutaneous drainage is

effective in a single, unilocular abscess, it is more limited in a multiloculated abscess, especially if the contents are tenacious.

Surgical drainage

Surgical drainage is mainly undertaken in patients who have not improved with percutaneous drainage or in whom the collections are not appropriate for percutaneous drainage, as in multiple abscesses, severe necrotising pancreatitis or interloop abscesses with Crohn's disease. An extraperitoneal approach, if possible, is generally preferred because it limits the risk of further contamination of the peritoneal cavity. With a distally located pelvic abscess that is bulging, the drainage may be performed through the rectum or vagina. The loculae are gently broken down digitally and soft drains are placed in the most dependent position.

Definitive surgery

Definitive surgery is generally deferred after preliminary drainage of the abscess. In some situations, surgery on the offending organ is performed, for example, appendicectomy for appendiceal abscess, unilateral salpingo-oophorectomy for tubo-ovarian abscess, omental patch of a perforated duodenal ulcer.

Treatment

In patient treatment

Regimen A

- Cefoxitin 2g IV every 6 hours or Cefotetan 2g IV every 12 hours, plus
- doxycycline 100mg IV 12 hourly until improved, followed by doxycycline 100mg orally bid, to complete 14 days

Regimen B

- Clindamycin 900mg IV every 8 hours plus,
- Gentamycin 2mg/kg IV once, followed by 1.5 mg/kg IV 8 hourly until improved, followed by Doxycycline 100mg orally bid, to complete 14 days.

Out patient treatment

Regimen A

- Ofloxacin 400mg orally bid for 14 days, Or
- Levofloxacin 500mg every day for 14 days with or without,
- Metronidazole 500mg bid orally for 14 days

Regimen B

- Ceftriaxone 250 mg IM single dose, Or,
- Cefoxitin 2 g IM single dose and probenecid 1 g orally,
- Plus,
- Doxycycline 100mg bd, to complete 14 days with or without,
- Metronidazole 500mg orally bid for 14 days

Analgesics

- Analgin

- Pethidine

- **Sedatives**

- Valium 5-10mg

Complications

- **Infertility-** If the fallopian tubes are totally blocked by scar tissue, sperm cannot fertilize an egg, and the woman becomes infertile. Infertility also can occur if the fallopian tubes are partially blocked or even slightly damaged the sperm can pass through the stricture but the fertilized ovum cannot reach the uterus.
- **Ectopic pregnancy**- a partially blocked or slightly damaged fallopian tube may cause a fertilized egg to remain in the fallopian tube and begins to grow.
- **Chronic pelvic pain**- Scarring in the fallopian tubes and other pelvic structures can cause chronic pelvic pain
- **Tubo-ovarian abscess-** If the first or subsequent episodes of inflammation are not adequately treated then the condition can become chronic and abscesses can form in the pelvis.
- **Peritonitis-** extension of the PID infection into the peritoneal cavity.
- **Septic shock –** This is due to flooding of bacterial endotoxins from the infected area.

SELF ASSESSMENT TEST

Choose the correct answer by encircling the correct answer; True/False (T/F)

1. Pelvic inflammatory disease is Pelvic Inflammatory disease is an acute, subacute, recurrent or chronic infectious condition of the pelvic cavity that involve infection of the fallopian tubes (salpingitis), ovaries (oophoritis), cervix (cervicitis), uterus (endometritis) and pelvic peritoneum (peritonitis) characterized by severe lower abdominal pain and copious foul smelling vaginal discharge.

2. The causative organisms of pelvic inflammatory disease include Mycobacterium tuberculosis

3. The following parts of the reproductive organs that get infected; The cervix, uterus, fallopian tubes, ovaries and pelvic peritoneum and lungs

4. Some of the investigations that you would carry out to establish PID in your patient are Culdocentesis and history taking

5. The complications of pelvic inflammatory disease are as follows except; pneumonia and malaria

ANSWERS

1. True

2.False **;**

3. False

4. True

5. False

3.15 Management of Clients with Infertility Problems

Welcome to this fresh topic where we are going to discuss infertility in both male and female.

In this topic, we will dwell on the management of a client with fertility problems. We will begin by looking at male infertility and how it can be identified.

According to Verralls, 2011, infertility is when a married couple remains childless after 2 years of married life. Approximately 15 % of couples are infertile. This means they are not able to conceive a child even though they have had frequent, unprotected sexual intercourse for a year or longer. In about half of these couples, male infertility plays a role (http://www.mayoclinic.com/health/male-infertility/DS01038). Infertility is when a woman can't get pregnant after two years of having sex without any contraception (bupa.co.uk). A number of things can affect a woman's ability to conceive, but often doctors cannot find a cause for infertility.

Male infertility

Male infertility is due to low sperm production, misshapen or immobile sperm, or blockages that prevent the delivery of sperm. Illnesses, injuries, chronic health problems, lifestyle choices and other factors can play a role in causing male infertility.

Not being able to conceive a child can be stressful and frustrating, but a number of male infertility treatments are available.

Symptoms

The main sign of male infertility is the inability to conceive a child. There may be no other obvious signs or symptoms. In some cases, however, an underlying problem such as an inherited disorder, hormonal imbalance or a condition that blocks the passage of sperm may cause signs and symptoms. Male infertility signs and symptoms may include:

- The inability to conceive a child
- Problems with sexual function — for example, difficulty with ejaculation or difficulty maintaining an erection (erectile dysfunction)
- Pain, swelling or a lump in the testicle area
- Decreased facial or body hair or other signs of a chromosomal or hormonal abnormality
- Having a lower than normal sperm count (fewer than 15 million sperm per millilitre of semen or a total sperm count of less than 39 million per ejaculate).

Causes

Male infertility has many causes--from hormonal imbalances, to physical problems, to psychological and/or behavioural problems (www.stanford.edu).

These causes fall into 3 main categories namely;

1. Hormonal problems or imbalance

2. Physical problems
3. Psychological/behavioural problems

Hormonal Problems

The following is a list of hormonal disorders which cause male infertility:

Hyperprolactinemia:
Elevated prolactin--a hormone associated with nursing mothers, is found in 10 to 40 % of infertile males. Mild elevation of prolactin levels produces no symptoms, but a greater elevation of the hormone reduces sperm production, reduces libido and may cause impotence. This condition responds well to the drug Parlodel (bromocriptine).

Hypothyroidism:
Low thyroid hormone levels--can cause poor semen quality, poor testicular function and may disturb libido. This condition may be caused by a diet high in iodine. Reducing iodine intake or beginning thyroid hormone replacement therapy can elevate sperm count. This condition is found in only 1 % of infertile men.

Congenital Adrenal Hyperplasia:

Occurs when the pituitary is suppressed by increased levels of adrenal androgens

Symptoms include low sperm count, an increased number of immature sperm cells, and low sperm cell motility. This disorder is treated with cortisone replacement therapy. This condition is found in only 1 % of infertile men.

Hypogonadotropic Hypopituitarism:

Low pituitary gland output of LH and FSH. This condition arrests sperm development and causes the progressive loss of germ cells from the testes and causes the seminiferous tubules and Leydig (testosterone producing) cells to deteriorate. This condition may be treated with the drug Serophene. However, if all germ cells are destroyed before treatment commences, the male may be permanently infertile.

Panhypopituitafism:
Complete pituitary gland failure--lowers growth hormone, thyroid-stimulating hormone, and LH and FSH levels. Symptoms include: lethargy, impotence, decreased libido, loss of secondary sex characteristics, and normal or undersized testicles. Supplementing the missing pituitary hormones may restore vigor and a hormone called hCG may stimulate testosterone and sperm production.

Physical Problems

A variety of physical problems can cause male infertility. These problems either interfere with the sperm production process or disrupt the pathway down which sperm travel from the testes to the tip of the penis. These problems are usually characterized by a low sperm count and/or abnormal sperm morphology.

Varicocele:
A varicocele is an enlargement of the internal spermatic veins that drain blood from the testicle to the abdomen (back to the heart) and are present in 15% of the general male population and 40% of infertile men. A varicocoele may cause reduced sperm count and abnormal sperm morphology which cause infertility.

Damaged Sperm Ducts:

7 % of infertile men cannot transport sperm from their testicles to out of their penis. This pathway may be blocked by a number of conditions: A genetic or developmental mistake may block or cause the absence of one or both tubes (which transport the sperm from the testes to the penis)· Scarring from tuberculosis or some STDs may block the epididymis or tubes. An elective or accidental vasectomy may interrupt tube continuity.

Torsion:
Is a common problem affecting fertility that is caused by a supportive tissue abnormality which allows the testes to twist inside the scrotum which is characterized by extreme swelling. Torsion pinches the blood vessels that feed the testes shut which causes testicular damage. If emergency surgery is not performed to untwist the testes, torsion can seriously impair fertility and cause permanent infertility if both testes twist.

Infection and Disease:

Mumps, tuberculosis, brucellosis, gonorrhoea, typhoid, influenza, smallpox, and syphilis can cause testicular atrophy. A low sperm count and low sperm motility are indicators of this condition. Also, elevated FSH levels and other hormonal problems are indicative of testicular damage. Some STDs like gonorrhoea and chlamydia can cause infertility by blocking the epididymis or tubes. These conditions are usually treated by hormonal replacement therapy and surgery in the case of tubular blockage.

Klinefelter's Syndrome:

Is a genetic condition in which each cell in the human body has an additional X chromosome--men with Klinefelter's Syndrome have one Y and two X chromosomes. Physical symptoms include peanut-sized testicles and enlarged breasts. A chromosome analysis is used to confirm this analysis. If this condition is treated in its early stages (with the drug hCG), sperm production may commence and/or improve. However, Klinefelter's Syndrome eventually causes all active testicular structures to atrophy. Once testicular failure has occurred, improving fertility is impossible.

Retrograde Ejaculation:

Is a condition in which semen is ejaculated into the bladder rather than out through the urethra because the bladder sphincter does not close during ejaculation. If this disorder is present, ejaculate volume is small and urine may be cloudy after ejaculation. This condition affects 1.5 % of infertile men and may be controlled by medications like decongestants which contract the bladder sphincter or surgical reconstruction of the bladder neck can restore normal ejaculation.

Psychological/Physical/Behavioural Problems:

Several sexual problems exist that can affect male fertility. These problems are most often both psychological and physical in nature:

Erectile Dysfunction (ED):

Also known as impotence, this condition is common and affects 20 million American men. ED is the result of a single, or more commonly a combination of multiple factors. In the past, ED was thought to be the result of psychological problems, but new research indicates that 90 % of cases are organic in nature. However, most men who suffer from ED have a secondary psychological problem that can worsen the situation like performance anxiety, guilt, and low self-esteem. Many of the common causes of impotence include: diabetes, high blood pressure, heart and vascular disease, stress, hormone problems, pelvic surgery, trauma, venous leak, and the side effects of frequently prescribed medications (that is, Prozac and other SSRIs, Propecia). Luckily, many treatment options exist for ED depending on the cause--these will be discussed in the treatment section.

Premature Ejaculation:

Premature ejaculation is defined as an inability to control the ejaculatory response for at least thirty seconds following penetration. Premature ejaculation becomes a fertility problem when ejaculation occurs before a man is able to fully insert his penis into his partner's vagina. Premature ejaculation can be overcome by artificial insemination or by using a behavioural modification technique called the "squeeze technique" which desensitizes the penis.

Ejaculatory Incompetence:

This rare psychological condition prevents men from ejaculating during sexual intercourse even though they can ejaculate normally through masturbation. This condition sometimes responds well to behavioural therapy; if this technique does not work, artificial insemination can be employed using an ejaculate from masturbation.

Factors Necessary for Conception to Occur

- The man must produce healthy sperm: Initially, this involves the growth and formation of the male reproductive organs during puberty. At least one of his testicles must be functioning correctly, and he must produce testosterone and other hormones to trigger and maintain sperm production.
- Spermatozoa have to be carried into the semen: Once spermatozoa are produced in the testicles, delicate tubes transport them until they mix with semen and get ejaculated out of the penis.
- There needs to be enough spermatozoa in the semen: If the number of spermatozoa in his semen (sperm count) is low, it decreases the odds that one of the sperm will fertilize his partner's egg. A low sperm count is fewer than 15 million sperm per millilitre of semen or fewer than 39 million per ejaculate.
- The Sperm must be shaped correctly and able to move: If the movement (motility) or shape (morphology) of his sperm is abnormal, the sperm may not be able to reach or penetrate the partner's egg.

Medical causes

Problems with male fertility can be caused by a number of health issues and medical treatments. Some of these include:

- Varicocele: A varicocele is a swelling of the veins that drain the testicle. It's a common cause of male infertility. This may prevent normal cooling of the testicle, leading to reduced sperm count and fewer moving sperm.
- Infection: Some infections can interfere with sperm production or sperm health, or can cause scarring that blocks the passage of sperm. These include some sexually transmitted infections, including chlamydia and gonorrhoea; inflammation of the prostate (prostatitis); and inflamed testicles due to mumps (mumps orchitis).
- Ejaculation issues: Retrograde ejaculation occurs when semen enters the bladder during orgasm instead of emerging out the tip of the penis. Various health conditions can cause retrograde ejaculation, including diabetes, spinal injuries, medications, and surgery of the bladder, prostate or urethra. Some men with spinal cord injuries or certain diseases can't ejaculate semen, even though they still produce sperm.
- Antibodies that attack sperm: Anti-sperm antibodies are immune system cells that mistakenly identify sperm as harmful invaders and attempt to eliminate them.
- Tumors: Cancers and non-malignant tumors can affect the male reproductive organs directly or can affect the glands that release hormones related to reproduction, such as the pituitary gland. In some cases, surgery, radiation or chemotherapy to treat tumors can affect male fertility.
- Undescended testicles: In some males, during fetal development one or both testicles fail to descend from the abdomen into the sac that normally contains the testicles (scrotum). Decreased fertility is more likely in men who have had this condition.

- Hormone imbalances: Infertility can result from disorders of the testicles themselves or an abnormality affecting other hormonal systems including the hypothalamus, pituitary, thyroid and adrenal glands. Low testosterone (male hypogonadism) and other hormonal problems have a number of possible underlying causes.
- Sperm duct defects: The tubes that carry sperm (sperm ducts) can be damaged by illness or injury. Some men experience blockage in the part of the testicle that stores sperm (epididymis) or a blockage of one or both of the tubes that carry sperm out of the testicles. Men with cystic fibrosis and some other inherited conditions may be born without sperm ducts altogether.
- Chromosome defects: Inherited disorders such as Klinefelter's syndrome — in which a male is born with two X chromosomes and one Y chromosome (instead of one X and one Y) — cause abnormal development of the male reproductive organs. Other genetic syndromes associated with infertility include cystic fibrosis, Kallmann's syndrome, Young's syndrome and Kartagener syndrome.
- Problems with sexual intercourse: These can include trouble keeping or maintaining an erection sufficient for sex (erectile dysfunction), premature ejaculation, painful intercourse, anatomical abnormalities such as having a urethral opening beneath the penis (hypospadias), or psychological or relationship problems that interfere with sex.
- Celiac disease: A digestive disorder caused by sensitivity to gluten, celiac disease can cause male infertility. Fertility may improve after adopting a gluten-free diet.
- Certain medications: Testosterone replacement therapy, long-term anabolic steroid use, cancer medications (chemotherapy), certain antifungal medications, some ulcer drugs and certain other medications can impair sperm production and decrease male fertility.

Environmental causes

Overexposure to certain environmental elements such as heat, toxins and chemicals can reduce sperm production or sperm function. Specific causes include:

- **Industrial chemicals:** Extended exposure to benzenes, toluene, xylene, pesticides, herbicides, organic solvents, painting materials and lead may contribute to low sperm counts.
- **Heavy metal exposure.** Exposure to lead or other heavy metals also may cause infertility.
- **Radiation or X-rays:** Exposure to radiation can reduce sperm production, though it will often eventually return to normal. With high doses of radiation, sperm production can be permanently reduced.
- **Overheating the testicles:** Frequent use of saunas or hot tubs may temporarily lower one’s sperm count. Sitting for long periods, wearing tight clothing or working on a laptop computer for long stretches of time also may increase the temperature in your scrotum and slightly reduce sperm production. The type of underwear you wear is unlikely to make a significant difference in male fertility.

Health, lifestyle and other causes

Some other causes of male infertility include:

- **Illegal drug use:** Anabolic steroids taken to stimulate muscle strength and growth can cause the testicles to shrink and sperm production to decrease. Use of cocaine or marijuana may temporarily reduce the number and quality of the sperm as well.
- **Alcohol use:** Drinking alcohol can lower testosterone levels, cause erectile dysfunction and decrease sperm production. Liver disease caused by excessive drinking also may lead to fertility problems.
- **Occupation:** Certain occupations can increase a man’s risk of infertility, including those associated with extended use of computers or video display monitors, shift work, and work-related stress.

- **Tobacco smoking:** Men who smoke may have a lower sperm count than do those who do not smoke. Passive smoke also may affect male fertility.
- **Emotional stress:** Stress can interfere with certain hormones needed to produce sperm. Severe or prolonged emotional stress, including problems with fertility, can affect the sperm count.
- **Weight:** Obesity can cause hormone changes that reduce male fertility.
- **Prolonged bicycling:** Prolonged bicycling is another possible cause of reduced fertility due to overheating the testicles. In some cases, bicycle seat pressure on the area behind the testicles (perineum) can cause numbness in the penis and erectile dysfunction.

Risk factors

A number of risk factors are linked to male infertility. They include:

- Smoking tobacco
- Using alcohol
- Using certain illegal drugs
- Being overweight
- Having certain past or present infections
- Being exposed to toxins
- Overheating the testicles
- Having a prior vasectomy or vasectomy reversal
- Being born with a fertility disorder or having a blood relative with a fertility disorder
- Having certain medical conditions, including tumors and chronic illnesses
- Taking certain medications or undergoing medical treatments, such surgery or radiation used for treating cancer
- Performing certain prolonged activities such as bicycling or horseback riding, especially on a hard seat or poorly adjusted bicycle

Tests and diagnosis

Many infertile couples have more than one cause of infertility, so it's likely that both partners will need to see a doctor. It may take a number of tests to determine the cause of infertility. In some cases, a cause is never identified. Infertility tests can be expensive and may not be covered by insurance.

Diagnosing male infertility problems usually involves:

- **General physical examination and medical history.** This includes examining the man’s genitals and asking questions about any inherited conditions, chronic health problems, illnesses, injuries or surgeries that could affect fertility. Your doctor may also ask about your sexual habits and about your sexual development during puberty.
- **Semen analysis.** Semen is generally obtained by masturbating and ejaculating into a special container at the doctor's office. Your semen is then sent to a laboratory to measure the number of sperm present and look for any abnormalities in the shape (morphology) and movement (motility) of the sperm. The lab will also check the semen for signs of problems such as infections. Often sperm counts fluctuate from one specimen to the next. In most cases, several semen analysis tests are done over a period of time to ensure accurate results. If the sperm analysis is normal, the doctor will recommend thorough testing of the female partner before conducting any more male infertility tests. The doctor may recommend additional tests to help identify the cause of your infertility. These can include:
- **Scrotal ultrasound.** This test uses high-frequency sound waves to produce images inside your body. A scrotal ultrasound can help your doctor see obstructions or other problems in the testicles and supporting structures.

- **Trans-rectal ultrasound.** A small, lubricated wand is inserted into the man's rectum. This instrument allows the doctor to check the prostate, and look for blockages of the tubes that carry semen (ejaculatory ducts and seminal vesicles).
- **Hormone testing.** Hormones produced by the pituitary, hypothalamus and testicles play a key role in sexual development and sperm production. Abnormalities in other hormonal or organ systems may also contribute to infertility. A blood test measures the level of testosterone and other hormones.
- **Post-ejaculation urinalysis.** Sperm in the urine can indicate that his spermatozoa are traveling backward into the bladder instead of out the penis during ejaculation (retrograde ejaculation).
- **Genetic tests.** When sperm concentration is extremely low, genetic causes could be involved. A blood test can reveal whether there are sudden changes in the Y chromosome — signs of a genetic abnormality. Genetic testing may also be ordered to diagnose various congenital or inherited syndromes.
- **Testicular biopsy.** This test involves removing samples from the testicle with a needle. The results of the testicular biopsy will tell if sperm production is normal. If it is, your problem is likely caused by a blockage or another problem with sperm transport.
- **Anti-sperm antibody tests.** These tests are used to check for immune cells (antibodies) that attack sperm. You are especially likely to have anti-sperm antibodies if you've had a vasectomy reversal.
- **Specialized sperm-function tests.** A number of tests can be used to check how well your sperm survive after ejaculation, how well they can penetrate an egg, and whether there's any problem attaching to the egg. If you do have a low sperm count, having healthy sperm can be an important factor in male fertility.

Treatments and drugs

The doctor will try to improve the man's fertility by either correcting an underlying problem (if one is found) or trying treatments that seem like they may be helpful. Often, an exact cause of infertility can't be identified. Even if an exact cause isn't clear, the doctor may be able to recommend treatments that work. In all cases of infertility, the female partner will also need to be checked and may need treatment. In some cases, treatment of the female partner may help compensate for male fertility problems.

Treatments for male infertility include:

- **Surgery.** For example, a varicocele can often be surgically corrected or an obstructed vas deferens repaired.
- **Treating infections.** Antibiotic treatment may cure an infection of the reproductive tract, but doesn't always restore fertility.
- **Treatments for sexual intercourse problems.** Medication or counseling can help improve fertility in conditions such as erectile dysfunction or premature ejaculation.
- **Hormone treatments and medications.** The doctor may recommend hormone replacement or medications in cases where infertility is caused by high or low levels of certain hormones or problems with the way the body uses hormones.
- **Assisted reproductive technology (ART).** ART treatments involve obtaining sperm through normal ejaculation, surgical extraction or from donor individuals, depending on your specific case and wishes. The sperm is then inserted into the female genital tract, or used to perform in vitro fertilization or intracytoplasmic sperm injection.

When treatment doesn't work

Sometimes male fertility problems can't be treated, and it's impossible for a man to father a child. The doctor may suggest that the man and his partner consider either using sperm from a donor or adopting a child.

Complications

Infertility can be stressful for both to the man and his partner. Complications can include:

- Surgery or other procedures to treat an underlying cause of low sperm count or other reproductive problems
- Expensive and involved reproductive techniques such as in vitro fertilization
- Stress and relationship difficulties related to the inability to have a child
- An increased risk of cancer, particularly prostate cancer
- Prevention

Many types of male infertility aren't preventable. However, you can avoid some known causes of male infertility:

- Do not smoke.
- Limit or abstain from alcohol.
- Steer clear of illegal drugs.
- Keep the weight off.
- Do not get a vasectomy.
- Avoid the heat.
- Reduce stress.
- Avoid exposure to pesticides, heavy metals and other toxins.

Though the risk isn't conclusive, if you're an avid cyclist, consider using a gel saddle and a full-suspension bicycle. It may also help to avoid wearing very tightfitting clothing for long periods of time.

Female Infertility

A woman may have primary infertility, which means she has never been pregnant, or secondary infertility, if she has conceived previously.

Infertility can be caused by a problem affecting either partner. In about four out of 10 couples who can’t conceive, both partners have a condition that affects their ability to have a baby.

Symptoms of female infertility

There aren't any specific symptoms of infertility except being unable to conceive. However, if the problem is caused by a particular medical condition, the woman may have symptoms as a result of the same condition.

Causes of female infertility

There are various reasons why the woman may be having trouble getting pregnant, although in about a third of couples, gynaecologists may not be able to find any cause.

It's important to bear in mind that fertility decreases as one gets older. However, with regular unprotected sex more than nine out of 10 women aged 35 will conceive within three years of trying, and nearly eight out of 10 women aged 38 will do so (bupa.co.uk).

The most common reasons for infertility especially in women are:

- the ovaries not producing eggs
- damage to the fallopian tubes (the tubes that carry eggs from your ovaries to your womb)

There are a number of reasons why you the ovary may not be producing eggs. These include:

- polycystic ovary syndrome (PCOS), a condition in which the ovaries aren't working properly, the most common cause of ovulation problems
- premature ovarian failure, when your ovaries stop working before the usual age of menopause, which can be temporary or permanent
- disorders of the glands in your body that produce hormones, such as the thyroid and pituitary glands
- long-term conditions such as diabetes or cancer

Problems affecting the fallopian tubes that may lead to infertility include:

- infections, such as chlamydia, that damage or block your fallopian tubes
- endometriosis, a condition in which cells that normally line your womb (uterus) grow outside the womb in other parts of your body
- damage as a result of previous surgery to your fallopian tubes or ovaries
- damage as a result of another condition, for example, a pelvic infection or burst appendix

Infertility can also be caused by problems with the cervix or womb. For example, having non-cancerous growths in one's womb called fibroids, especially if they protrude into the womb lining.

It's possible that difficulty conceiving isn't the result of a problem with one's reproductive organs. Some other things that can affect your fertility include:

- Smoking – including being exposed to passive smoking or if the woman's mother smoked during pregnancy
- Drinking more than one to two units of alcohol once or twice a week
- Using illegal drugs such as marijuana or cocaine
- Being overweight – having a body mass index (bmi) of more than 29
- Being underweight – having a bmi of less than 19
- Taking certain medicines including non-steroidal anti-inflammatory drugs (nsaids) such as ibuprofen, antipsychotics to treat conditions such as schizophrenia, or a diuretic called spironolactone
- Treatment for cancer or hiv/aids
- Certain jobs – for example if the woman is exposed to certain pesticides or solvents
- High levels of stress as this can affect one's relationship and desire to have sex

Diagnosis of female infertility

It is always a good idea for a woman and her partner to go together and see the gynaecologist as well as the urologist.

The gynaecologist is likely to ask how long the couple had been trying for a baby and whether they have had any problems having sex. He or she may ask the woman about her lifestyle and medical history including:

- whether or not you have been pregnant or had an abortion or a miscarriage in the past
- questions about the client's menstrual cycle
- whether she had ever had any sexually transmitted infections (STIs), serious long-term diseases or other conditions that could affect fertility
- whether she is currently taking any medicines
- Questions about her lifestyle, for example how much she exercises, or if she smokes, drink alcohol or take recreational drugs.

The Gynaecologist may offer to do some tests. These include blood tests to check if the woman is ovulating and look at her hormone levels and a urine test or swab for chlamydia. The Gynaecologist may also do an internal pelvic examination.

If the results and examination are normal, the gynaecologist may give the woman information about lifestyle changes and advise her to keep trying naturally, depending on how long she has been trying and her age.

If the test results or examination are abnormal or the woman is over 35, the Gynaecologist would make a decision on the line of management depending on the underlying cause.

The woman may be offered an ultrasound scan to check her fallopian tubes, ovaries and uterus. Alternatively, the doctor may recommend a test called hysterosalpingography or a test called a laparoscopy and dye.

A hysterosalpingography can show if the fallopian tubes are blocked. It uses a type of X-ray procedure called fluoroscopy. This involves injecting a dye (contrast medium) that shows up on X-rays into the uterus and fallopian tubes, and taking a series of X-rays that are displayed on a TV monitor. If the tubes are clear, the dye will pass through them.

A laparoscopy and dye is a surgical procedure. It's used to see if the fallopian tubes are blocked, as well as check your ovaries and uterus. A medical telescope with an attached camera, called a laparoscope, is put into the abdomen (tummy) through a small cut in her belly button (umbilicus). The pictures from the camera are sent to a TV monitor and magnified, so that the surgeon can clearly see the organs inside the abdomen. A dye is injected which passes through the fallopian tubes to check for any blockages.

Treatment of female infertility

If the infertility is caused by an underlying problem, such as endometriosis, there may be treatments that can improve the woman's chance of becoming pregnant. If the doctor can't find a particular cause for the infertility, there are a number of options that he or she may suggest.

Self-help

Having sex two to three times a week maximises the chance of becoming pregnant. Doctors do not recommend trying to time intercourse with ovulation because it tends to put couples under too much stress.

The doctor may also suggest making lifestyle changes, for example, stopping smoking and not drinking more than one to two units of alcohol once or twice a week. She may also be advised to lose excess weight or put some on.

Medicines

If infertility is a result of a problem with ovulation, the doctor may prescribe a medicine such as clomifene citrate to stimulate your ovaries to produce eggs.

Surgery

Surgery may be an option if the client has endometriosis, if your fallopian tubes are damaged or if you have fibroids or adhesions (fibrous scars) in your womb.

However, surgery won't be suitable for everyone, so it's important to talk to the doctor about the best treatment for you.

Assisted reproduction

There are several methods of assisted reproduction (or assisted conception) that may be available to the woman, depending on what is causing her infertility. The main methods are:

- Intra-uterine insemination (IUI) – sperm are placed into your womb
- In vitro fertilisation (IVF) – an egg is fertilised with sperm outside the body and transferred into your womb
- Intracytoplasmic sperm injection (ICSI) – sperm is injected into an egg outside the body and then transferred into the uterus.

Living with female infertility

Having trouble getting pregnant can be upsetting and stressful. Feeling stressed, whether it's caused by her problems conceiving, work or something else, may affect her relationship with her partner. This in turn can have an impact on her libido and how often she has sex, leading to further difficulties conceiving.

She may find it helpful to talk to other people. There are support groups where you can meet with couples who are also having treatment for infertility. Alternatively, the doctor or clinic can give her details of a specialist fertility counsellor.

Counselling

Welcome to another topic on counselling. In this topic, you are going to learn about skills used in counselling a client.

Now that we have learnt about infertility we will look at counselling.

Counselling is a type of talking therapy that allows a person to talk about their problems and feelings in a confidential and dependable environment (http://www.nhs.uk/conditions/counselling/Pages/Introduction.aspx).

A counsellor is trained to listen with empathy (by putting themselves in a client's shoes). They can help the client deal with any negative thoughts and feelings that you have.

Sometimes, the term 'counselling' is used to refer to talking therapies in general, but counselling is also a specific type of therapy in its own right.

Other psychological therapies include psychotherapy, cognitive behavioural therapy (CBT) and relationship therapy (which could be between members of a family, a couple or work colleagues).

Uses of counselling

Talking therapies, such as counselling, can be used to treat many different health conditions including:

- depression
- anxiety
- borderline personality disorder (BPD)
- obsessive compulsive disorder (OCD)
- post-traumatic stress disorder (PTSD)
- long-term illnesses
- eating disorders, such as anorexia nervosa and bulimia
- drug misuse

The Help Derived From Counselling

Counselling aims to help a client to deal with and overcome issues that are causing pain or making him/her feel uncomfortable.

It can provide a safe and regular space for someone to talk and explore difficult feelings. The counsellor is there to support the client and respect his/her views. They will not usually give advice, but will help the client to find his/her own insight and understanding of his/her problems.

Counselling can help clients to:

- cope with a bereavement or relationship breakdown
- cope with redundancy or work-related stress
- explore issues such as sexual identity
- deal with issues that are preventing them from achieving their ambitions
- deal with feelings of depression or sadness, and have a more positive outlook on life
- understand themselves and their problems better
- feel more confident
- develop a better understanding of other people's points of view

Counselling can often involve talking about difficult or painful feelings and, as one begins to face them, he/she may feel worse in some ways. However, with the help and support of his/her therapist, he/she should gradually start to feel better.

In most cases, it takes a number of sessions before the counselling starts to make a difference, and a regular commitment is required to make the best use of the therapy.

What to expect from counselling

During the counselling sessions, the client will be encouraged to express his/her feelings and emotions freely. By discussing client's concerns with the counsellor, the counsellor can help the client to gain a better understanding of his/her feelings and thought processes, as well as identifying ways of finding your own solutions to problems.

The counsellor may encourage the client to identify issues and, if appropriate, take personal responsibility for them. They will be able to help him/her recognize the effects of other people and their actions, and explore alternative ways of coping with them.

It can be a great relief to share his/her worries and fears with someone who acknowledges the client's feelings and is able to help you reach a positive solution.

Trusting your counsellor

A good counsellor will focus on you and listen without judging or criticizing the client. They may help him/her find out about how she/he could deal with your problems, but they should not tell you what to do.

For counselling to be effective, the client needs to build a trusting and safe relationship with his/her counsellor. If the client feels that he/she and his/her counsellor are not getting on, or that the clients are not getting the most out of their sessions, he/she should discuss this with his/her counsellor.

If the situation does not improve, or his/her counsellor is dismissive or unwilling to discuss the issue, it is perfectly acceptable to look for another counsellor with whom the client feels more comfortable.

Many counsellors and counselling organisations offer a sliding scale of fees, where the more sessions you have, the cheaper it becomes.

Providers of psychological therapy

As counselling involves talking about sensitive issues and revealing personal thoughts and feelings, your counsellor should be experienced and professionally qualified.

Different healthcare professionals may be trained in counselling or qualified to provide psychological therapies. These include:

- **Counsellors** – trained to provide counselling to help the client cope better with his/her life and any issues you have
- **Clinical and counselling psychologists** – healthcare professionals who specialise in assessing and treating mental health conditions using evidence-based psychological therapies
- **Psychiatrists** – qualified medical doctors who have received further training in diagnosing and treating mental health conditions
- **Psychotherapists** – similar to counsellors, but have usually received more extensive training; they are also often qualified psychologists or cognitive psychiatrists
- **Behavioural psychotherapists** – may come from a variety of professional backgrounds, and have received specific training in cognitive behaviour therapy.

Counselling formats

Many different types of counselling are available in a range of formats. For example, counselling can take place:

- Face-to-face
- Individually or in a group
- Over the phone
- By email
- Using a specialised computer program

The client may be offered counselling as a single session, as a short course of sessions over a few weeks or months, or as a longer course that lasts for several months or years.

3.16 Management of A Client With Fistulae

In this lesson we are going to discuss obstetric fistulas. A fistula is an abnormal tunnel-like opening between hollow internal organs or between an organ and the exterior of the body. (Monahan et.al, 2007).

Fistulas are severe medical conditions which are commonly caused by prolonged obstructed labour. It is more common developing countries where health facilities are inadequate. The women affected by this health condition tend to have an abnormal perforation either between the vagina and the rectum or between the vagina and the urinary bladder which leads to leaking of either stool or urine in the vagina. Due to the nature of the condition, women with fistulas are often stigmatized such that they become social outcasts. In our discussion we shall focus on the two types of fistulae which are commonly seen.

The lesson will consist of, types of fistulas, their causes, signs and symptoms, investigations done, treatment and the preventive measures taken.

Types of Fistula

- **Vesico-vaginal fistula** this is an artificial opening between the bladder or urethra and vagina (***Fraser et.al, 2004)***.
- **Rectal-vaginal fistula** this is an artificial opening between the rectum and vagina. (***Fraser et.al, 2004)***.
- **Urethral vaginal fistula** this is an artificial opening between the urethra and the vagina and
- **Vesico-uterine fistula**: - the perforation or fistula is between the uterus and the bladder. This is a very rare condition which is mainly caused by uterine cancers

Causes of fistulae

- Prolonged obstructed labour- this will increase pressure of the foetal head on the tissues of the bladder and rectum reducing the blood flow to the area which will cause sloughing.
- Allowing a woman to go into second stage of labour with full bladder may cause the bladder to burst like an inflated balloon does.
- Forceps delivery – Can cause direct trauma to the bladder and the rectum due to the proximity of the vagina to the bladder.
- Ruptured uterus- Uncontrolled injury to the uterus can occur in the lower segment which is in close proximity to the bladder and so cause trauma to the bladder.
- Hysterectomy- Vaginal hysterectomy can cause injury to the bladder.
- Surgery/Caesarean section especially if performed with full bladder in lower segment c/section will predispose to fistulae.
- Malignancy- Bladder malignancies/ rectal malignancies can slough and so form fistulae.
- Gang rape cases in war torn zones leads to severe mutilation and injuries of which formation of fistula occurs
- Direct trauma to the rectum
- Congenital malformation
- Rectovaginal fistulae can also be a symptom of various diseases, including infection by Lymphogranuloma venereum or the unintended result of surgery, such as episiotomy or sexual reassignment surgery
- Radiation for example in the treatment of Ca cervix

Pathophysiology

VVF occurs when the blood supply to the tissues of the vagina and the bladder and or rectum are restricted during prolonged obstructed labour, the tissues die between these organs. Trauma to the bladder may occur as a result of pressure from the foetal head during labour or as a result of trauma during delivery. If trauma is due to pressure, sloughing of the devitalized area takes 8-12 days to complete, forming holes through which urine can pass uncontrollably.

Signs and Symptoms of Vesico-Vaginal Fistula

- Urine trickles continuously into the vagina
- Smell of ammonia or urine from the vagina
- Irritation or excoriation of skin around the vulva due to the continuous presence of urine.
- Withdraw from social activities due to the bad odour and the discomfort

Signs and Symptoms of Recto- Vaginal Fistula

- Continuous discharge of faeces in the vagina (faecal incontinence).
- - Odour of faeces in the vagina.
- - Irritation of vulva due to stool.
- - Flatus is discharged through the vagina

Management fistulae

Investigations

- The patient will give a history of painless and continuous vaginal leakage of urine or faeces shortly after delivery, surgery among others.
- Pelvic examination of the mother in the knee-chest position
- Installation of methylene blue dye into the bladder will discolour a vaginal pack if a vesicovaginal fistula is present.
- Intravenous indigo-carmine is excreted in the urine and will discolour a vaginal pack in the presence of vesicovaginal
- Cystourethroscopy should be performed to visualize the bladder and urethra in order to determine the site and number of fistulas
- An intravenous pyelogram and retrograde pyelogram should be undertaken to localise a ureterovaginal fistula.
- Full blood count (FBC) so as to know the condition of the patient, whether they can stand the operation.
- Cross-matching and grouping so as to prepare for blood when needed during operation.
- Chest-X-Ray done to exclude any chest infections that may complicate the operation.

Treatment

- The main treatment available is reconstruction surgery in which the opening is repaired. This surgery has a 90% success rate for uncomplicated cases. Fistula repair can be done as soon as it is detected in obstetric complications, while in surgical fistula and post cancer therapy, waiting for three to six months is recommended to allow for inflammation to settle and the tissues to obtain good vascularity and pliability. During waiting period, urinary tract infection should be treated.
- Oestrogen therapy is instituted in postmenopausal women to control vagina atrophy prior to surgery.
- Catheterization if identified early enough using the Foley catheter to allow urine to drain off can help the wounded edges to come together giving it a greater chance of closing naturally, in smaller fistula caused by surgical trauma.
- For women who cannot have surgical repair done urostomy may be done and a bag for the collection of urine is worn on daily basis.

Nursing Care

A patient with an obstetric fistula has several problems. Some of them are listed below. The nursing care this patient is given pre-operatively and as well as post-operative after the repair. The following are some of the problems which are faced by these patients. Some are actual whilst others are potential problems. In our discussion will look at only thee problems in detail and provide the interventions.

Problems of a Patient with Obstetric Fistula

- Risk of urinary tract infections due to being constantly soiled.
- Pain related to relaxation of the pelvic support
- Deficient knowledge related to causes of structural disorders and treatment
- Social isolation related to low self-esteem and odour from draining urine or stool.
- Interrupted family process or interpersonal relationship related to the woman' anatomical and functional changes
- Incontinence of urine
- Anxiety due to surgery and also fear of prognosis
- Altered body nutrition less than body requirements.

Risk of infection related incontinence of urine or stool as well as from prolonged catheterization

Objective: to prevent and reduce the occurrence of infection

Interventions:

- Insert a urinary catheterize to minimize urine seepage into the vagina.
- Frequent changing of pants or pads and baths to prevent contamination of faecal matter to the urinary system.
- Maintain a good personal hygiene
- Monitor vital signs for detection of presence of infection
- Encourage patient to take plenty of fluids to encourage urinary system wash out and also to prevent dehydration.
- Encourage patience to take a high calorie and high protein diet to help boost up the immunity to aid in healing

Social isolation related to low self-esteem and odour from draining urine or stool.

Objective: To build up self-esteem and prevent isolation.

Intervention

- Assess the level of knowledge about the cause of condition damage so that the patient is educated about the process of her condition.
- Good support empathetic care from the health staff and family will help the client to adjust to the condition.
- Reassure her of possible treatment and cure after surgery.
- Explain the process of the condition to the client.
- Allow verbalization of fears by the patient.
- Encourage client to maintain good body hygiene to minimize odour.
- May use patients who had had same problem and are healed to talk and encourage them.
- Allow patient to talk with significant others, clarifies concerns and reduce isolation and withdraw.

Encourage patient to perform her own care for example teach her how to change urine bag, catheter care among others.

Altered nutrition (less than body requirement) related to chronic condition and altered intake of food.

Objective: To improve the nutritional status of the patient to aid in healing process.

Interventions:

- Encourage high protein and calorie diet to aid with repair of body tissue.
- Encourage patients preferred nutritious food to stimulate appetite
- Encourage the patient to maintain good hygiene to prevent smells which can disturb appetite.
- Weigh patient to determine effectiveness of interventions.

Information, Education, and communication on discharge after surgery should be emphasized to both patient and spouse and should include the following

- Encourage good nutrition to promote healing
- To abstain from sexual intercourse until 3 months after surgery
- Client should be on a family planning method for 6 months to one year before getting pregnant to allow for healing and nutritional build up.
- Future pregnancy: - Client should have adequate antenatal care and should deliver by all a means at the hospital because delivery should be through a caesarean section to prevent recurrence of fistula due to pressure from presenting part.

Complications of Fistulae

- If left untreated persistent ulcerations and infections can occur leading to kidney failure and death.
- Prolonged limited intake of fluid and food to minimize urine and stool formation may lead to severe dehydration and malnutrition.
- Depression, abandonment by partners, family and communities can occur due to the offensive odour.
- Isolation from food preparation and prayer ceremonies due to leaking and smell.
- Suicide and suicidal attempts may result.

Prevention of Fistulae

- Information, education and communication on importance of improved nutrition, access to obstetrical care and support from trained health care professionals throughout pregnancy.
- Carrying out community-level awareness campaigns to educate on prevention of fistulas through spacing of births, importance of postponing early marriage and delivery under supervision of skilled staff.
- Routine screening of cervical cancer so as to allow for early treatment before complications set in.
- Encouraging women staying far away from hospitals that can provide emergency obstetric care to lodge at hospitals when pregnancy is term.

SELF ASSESSMENT TEST

Write true or false

1. A fistula is a closure between two hollow organs. The types of obstetric fistulae are; Vesico-vaginal fistula, Rectal-vaginal fistula, Urethral vaginal fistula and Vesico-uterine fistula

3. All of the following are causes of fistulae; Prolonged obstructed labour- this will increase pressure of the foetal head on the tissues of the bladder and rectum reducing the blood flow to the area which will cause sloughing, Allowing a woman to go into second stage of labour with full bladder may cause the bladder to burst like an inflated balloon does and drinking very hot tea while in labour

- 4. Treatment for obstetric fistulae includes; Reconstruction surgery in which the opening is repaired, Oestrogen therapy is instituted in postmenopausal women to control vagina atrophy prior to surgery, Catheterization if identified early enough using the Foleys catheter to allow urine to drain off can help the wounded edges to come together giving it a greater chance of closing naturally, in smaller fistula caused by surgical trauma and for women who cannot have surgical repair done urostomy may be done and a bag for the collection of urine is worn on daily basis.

ANSWERS

1. False

2. True

3. False

4. True

3.17 Management of a Patient With Tumours

Congratulations for successfully completing the topic on management of a patient with a fistula. We now welcome you to another topic focussing on the care of a patient with tumours. In this topic, you are going to learn about tumours both non-invasive (Benign) and invasive (malignant) tumours. We will begin by discussing benign tumours followed by malignant ones.

Tumours are abnormal growths in the body and are made up of extra cells. Normally, cells grow and divide to form new cells as the body needs them. When cells grow old, they die, and new cells take their place. Sometimes, this process goes wrong. New cells form when your body does not need them, and old cells do not die when they should. When these extra cells form a mass, it is called a tumour.

Tumours can be either benign or malignant. Benign tumours aren't cancer. Malignant ones are cancerous. Benign tumours grow only in one place. They cannot spread or invade other parts of your body. Even so, they can be dangerous if they press on vital organs, such as your brain.

Treatment often involves surgery. Benign tumours usually do not grow back (http://www.nlm.nih.gov/medlineplus/benigntumors.html)

Benign Tumours

The following the common benign tumours in gynaecology:

Fibroids

Dear learner, you are now invited to spend a bit of your time to look at our new topic of discussion, the uterine growths known as fibroids.

You will discover that fibroids are of various types and assume their nomenclature based on the site of location.

Uterine fibroids are the most common pelvic tumours. As many as 1 in 5 women may have fibroids during their childbearing years (the time after starting menstruation for the first time and before menopause).

Fibroids usually affect women over the age of 30. They are rare in women under 20, and often shrink and cause no symptoms in women who have gone through menopause. They are more common in African Americans than Caucasians. However some women are genetically predisposed.

Fibroids can be so tiny that you need a microscope to see them. However, they can grow very large. They may fill the entire uterus, and may weigh more than a 20kg mass. Although it is possible for just one fibroid to develop, usually there is more than one.

Uterine fibroids are noncancerous growths of the uterus that often appear during childbearing years. Also called leiomyomas (lie-o-my-O-muhs) or myomas, uterine fibroids aren't associated with an increased risk of uterine cancer and almost never develop into cancer (http://www.mayoclinic.com/health/uterine-fibroids/DS00078).

Pathogenesis

Uterine fibroids develop from the smooth muscular tissue of the uterus (myometrium). A single cell divides repeatedly, eventually creating a firm, rubbery mass distinct from nearby tissue. The growth patterns of uterine fibroids vary — they may grow slowly or rapidly, or they may remain the same size. Some fibroids go through growth spurts, and some may shrink on their own. Many fibroids that have been present during pregnancy shrink or disappear after pregnancy, as the uterus goes back to a normal size.

Fibroids range in size from seedlings, undetectable by the human eye, to bulky masses that can distort and enlarge the uterus. They can be single or multiple, in extreme cases expanding the uterus so much that it reaches the rib cage.

As many as 3 out of 4 women have uterine fibroids sometime during their lives, but most are unaware of them because they often cause no symptoms. Your doctor may discover fibroids incidentally during a pelvic exam or prenatal ultrasound. (mayoclinic.com).

Cause

The cause of uterine fibroid tumours is unknown.

- Age- Fibroids are rare before the age of 20 years but common in the ages between 35-40 years.
- Parity- are more common in the multiparous and relatively in the infertile woman but it is not known whether sterility causes fibroids or vice versa. The general view is that the uterus which is deprived of pregnancies consoles itself with myomas (fibroids) or as one writer put it fibroids are as a result of virtue (moral of excellence or goodness and babies are fruits of sin).
- Race and genetic factors-more common in the negroids but also irrespective of race they can have familiar tendency.
- Mechanical stress- these are not a widely accepted concept because it explains fibroids as fibro muscular reaction to mechanical stress in the mayometrial wall, these stresses operate mainly in pregnancy hence their association with the multiparity.
- Ovarian function-fibroid growth seems to depend on the hormone oestrogen (especially excessive oestrogen stimulation). As long as a woman with fibroids is menstruating, a fibroid will probably continue to grow, usually slowly.

Sites

Fibroids are often described by their location in the uterus:

- Myometrial (intramural myoma) -- in the muscle wall of the uterus
- Submucosal (intracavitary myoma)-- just under the surface of the uterine lining
- Subserosal (serosal myoma)-- just under the outside covering of the uterus
- Pendunculated -- occurring on a long stalk on the outside of the uterus or inside the cavity of the uterus

Symptoms

In women who have symptoms, the most common symptoms of uterine fibroids include:

- Heavy menstrual bleeding
- Prolonged menstrual periods — seven days or more of menstrual bleeding
- Pelvic pressure or pain
- Frequent urination
- Difficulty emptying the bladder
- Constipation

- Backache or leg pains

Rarely, a fibroid can cause acute pain when it outgrows its blood supply. Deprived of nutrients, the fibroid begins to die. By-products from a degenerating fibroid can seep into surrounding tissue, causing pain and, rarely, fever. A fibroid that hangs by a stalk inside or outside the uterus (pedunculated fibroid) can trigger pain by twisting on its stalk and cutting off its blood supply.

Fibroid location, size and number influence signs and symptoms:

• Submucosal fibroids. Fibroids that grow into the inner cavity of the uterus (submucosal fibroids) are more likely to cause prolonged, heavy menstrual bleeding and are sometimes a problem for women attempting pregnancy.

• Subserosal fibroids. Fibroids that project to the outside of the uterus (subserosal fibroids) can sometimes press on your bladder, causing you to experience urinary symptoms. If fibroids bulge from the back of your uterus, they occasionally can press either on your rectum, causing a pressure sensation, or on your spinal nerves, causing backache.

• Intramural fibroids. Some fibroids grow within the muscular uterine wall (intramural fibroids). If large enough, they can distort the shape of the uterus and cause prolonged, heavy periods, as well as pain and pressure.

Risk factors

There are few known risk factors for uterine fibroids, other than being a woman of reproductive age. Other factors that can have an impact on fibroid development include:

• Heredity. If your mother or sister had fibroids, you're at increased risk of developing them.

• Race. Black women are more likely to have fibroids than women of other racial groups. In addition, black women have fibroids at younger ages, and they're also likely to have more or larger fibroids.

• Other factors. Onset of menstruation at an early age, having a diet higher in red meat and lower in green vegetables and fruit, and drinking alcohol, including beer, appear to increase your risk of developing fibroids.

More common symptoms of uterine fibroids are:

- Un abdominal tumour- often not tender unless there are some complications and it rarely gives rise to pain but occasionally local discomfort and a feeling of weight gain.
- Abdominal fullness, gas, or constipation due to pressure on the surrounding organs
- Bleeding between periods (metrorrhagia-irregular bleeding)
- Increase in urinary frequency – as a result of pressure if the tumour is pressing in the pouch of Douglas because of the weight of the tumour pressing on the bladder.
- Heavy menstrual bleeding (menorrhagia), sometimes with the passage of blood clots with secondary symptoms of anaemia such as shortness of breath, heart palpitations, weakness and pallor
- Menstrual periods that may last longer than normal
- Pelvic cramping or pain with periods (dysmennorrehea) - often occur when there is associated endometriosis or pelvic inflammatory disease or torsion.
- Sensation of fullness or pressure in lower abdomen
- Pain during intercourse

Note: There are often no symptoms.

Treatment for the symptoms of fibroids may include:

- Birth control pills (oral contraceptives) to help control heavy periods
- Intrauterine devices (IUDs) that release the hormone progestin to help reduce heavy bleeding and pain
- Iron supplements to prevent or treat anaemia due to heavy periods. Sometimes blood transfusion is given to correct the anaemia
- Nonsteroidal Anti-Inflammatory Drugs (NSAIDs) such as ibuprofen or naprosyn for cramps or pain
- Hormonal therapy (gonadotropin releasing hormone (GnRH) agonists or Depo Leuprolide injections) may be used to help shrink the fibroids. This therapy is used only for a short period of time, either before surgery to remove a fibroid or when a woman is expected to reach menopause soon. Side effects include hot flashes and vaginal dryness.
- Mifepristone (RU 486) a progesterone antagonist has also been prescribed.
- Fibroids normally shrink and disappear during menopause when estrogen is no longer produced
- Surgery and procedures used to treat fibroids include:
- Hysteroscopic resection of fibroids: Women who have fibroids growing inside the uterine cavity may need this outpatient procedure. In this procedure, a small camera and instruments are inserted through the cervix into the uterus to remove the fibroid tumors.
- Uterine artery embolization: This procedure stops the blood supply to the fibroid, causing it to die and shrink. Women who may want to become pregnant in the future should discuss this procedure with their health care provider.
- Myomectomy: This surgery removes the fibroids. It is often the chosen treatment for women who want to have children, because it usually can preserve fertility. More fibroids can develop after a myomectomy.
- Hysterectomy: This invasive surgery may be an option if medicines do not work and other surgeries and procedures are not an option.

Prognosis

- Some women with fibroids have no symptoms and may not need treatment.
- During a pregnancy, existing fibroids may grow due to the increased blood flow and estrogen levels. The fibroids usually return to their original size after the baby is delivered.

Complications

Although uterine fibroids are not usually dangerous, they can cause discomfort and may lead to complications such as anaemia from heavy blood loss.

Fibroids usually do not interfere with conception and pregnancy. However, it's possible that fibroids could cause infertility or pregnancy loss although the risk is considered to be small. Submucosal fibroids may prevent implantation and growth of an embryo. In such cases, doctors often recommend removing these fibroids before attempting pregnancy or if you've had multiple miscarriages. Rarely, fibroids can distort or block your fallopian tubes, or interfere with the passage of sperm from your cervix to your fallopian tubes.

- Infertility especially with submucus fibromyoma
- Interfers with implantation of the fertilized ovum as the uterus and tubes may be distorted

- Abortion and premature labour if tumour is very large or are multiple because there is not enough room in the uterus
- Malposition or malpresentation of the fetus leading some pregnant women with fibroids needing a caesarean section because fibroids can occasionally block the birth canal or cause the baby to be positioned wrongly.
- Obstructed labour as there may be ineffective uterine contractions and postpartum haemorrhage because the uterus may fail to contract effectively

Other complications of fibroids include:

- Severe pain or excessively heavy bleeding that may require emergency surgery
- A pedunculated fibroid can become twisted and cause a kink in the blood vessels feeding the tumour (this type of fibroid may need surgery)
- Anaemia (which may be severe if the bleeding is very heavy)
- Urinary tract infections, if pressure from the fibroid prevents the bladder from fully emptying
- Cancerous changes called leio myosarcoma (in rare cases)

Ovarian Tumours

Ovarian tumours can be divided into three main groups:

- Functional
- Benign
- Malignant

In relative frequency, functional cysts account for about 24% of all ovarian cysts, benign cysts 70% and malignant 6% (http://www.patient.co.uk/doctor/Benign-Ovarian-Tumours.htm)

Benign epithelial neoplastic cysts

- Serous cystadenoma:
    - Develop papillary growths which may be so prolific that the cyst appears solid.
    - They are most common in women aged between 40-50 years.
    - About 15-25% are bilateral and about 20-25% are malignant.
- Mucinous cystadenoma:
    - The most common large ovarian tumours which may become enormous.
    - They are filled with mucinous material and rupture may cause pseudomyxoma peritonei. They may be multilocular.
    - They are most common in the 20-40 age group. About 5-10% are bilateral and around 5% will be malignant.

Benign neoplastic cystic tumours of germ cell origin

- Benign cystic teratoma; rarely malignant.

- They arise from primitive germ cells.
- A benign mature teratoma (dermoid cyst) may contain well-differentiated tissue, for example hair, teeth.
- 20% are bilateral.
- They are most common in young women.
- Poorly differentiated, malignant teratomas are rare.

Benign neoplastic solid tumours

- Fibroma (less than 1% are malignant); small, solid benign fibrous tissue tumours. They are associated with Meigs' syndrome and ascites.
- Thecoma (less than 1% are malignant).
- Adenofibroma.
- Brenner's tumour:
    - Rare ovarian tumours displaying benign, borderline or proliferative, and malignant variants.
    - Over 95% are benign and more than 90% are unilateral.
    - They may be associated with mucinous cystadenoma and cystic teratoma.

Causes of Ovarian Tumours

Tumors can form in the ovaries, just as they form in other parts of the body. If tumors are non-cancerous, they are said to be benign. If they are cancerous, they are called malignant. The three types of ovarian tumors are:

- Epithelial cell tumors start from the cells on the surface of the ovaries. These are the most common type of ovarian tumors.
- Germ cell tumors start in the cells that produce the eggs. They can either be benign or cancerous. Most are benign.
- Stromal tumors originate in the cells that produce female hormones.

http://women.webmd.com/guide/ovarian-cysts accessed on 11.10.2013 at 14:48hrs.

Epidemiology

- Benign ovarian tumours occur in 30% of females with regular menses (for example, luteal cysts as incidental findings on pelvic scans) and 50% of females with irregular menses.
- Predominantly they occur in premenopausal women; they may also occur perinatally.
- Benign ovarian tumours are uncommon in premenarchal and postmenopausal women.
- Benign neoplastic cystic tumours of germ cell origin are most common in young women. They account for 15-20% of all ovarian neoplasms.

Risk factors

- Obesity.
- Tamoxifen therapy has been associated with an increase in persistent ovarian cysts.

- Early menarche.
- Infertility.
- Dermoid cysts can run in families.

Presentation

- Asymptomatic - chance finding (for example, on bimanual examination or ultrasound).
- Dull ache or pain in the lower abdomen, low back pain.
- Torsion or rupture may lead to severe abdominal pain and fever.
- Dyspareunia.
- Swollen abdomen, with palpable mass arising out of the pelvis, which is dull to percussion and does not disappear if the bladder is emptied.
- Pressure effects, for example on the bladder, causing urinary frequency, or on venous return, causing varicose veins and leg oedema.

• Torsion, infarction or haemorrhage:

  - Cause severe pain.
  - Torsion may be intermittent, presenting with intermittent episodes of severe pain.

• Rupture:

- Rupture of a large cyst may cause peritonitis and shock.
- Rupture of mucinous cystadenomas may disseminate cells which continue to secrete mucin and cause death by binding up the viscera (pseudomyxoma peritonei).

• Ascites - suggests malignancy or Meigs' syndrome.

• Endocrine - hormone-secreting tumours may cause virilisation, menstrual irregularities or postmenopausal bleeding. This is uncommon though.

Differential diagnosis

- Non-neoplastic functional cysts, for example, follicle cyst, corpus luteum cyst, theca lutein cyst.
- Any other cause of pelvic pain.
- Polycystic ovarian syndrome.
- Endometrioma.
- Ovarian malignant tumour.
- Bowel - colonic tumour, appendicitis/appendix mass, diverticulitis.
- Gynaecological - pelvic inflammatory disease, tubo-ovarian abscess, uterine tumour (for example, fibroid), ectopic pregnancy, para-ovarian cyst.
- Pelvic malignancies, for example, retroperitoneal tumours, small intestine tumours and mesothelial tumours.

Investigations

- Pregnancy test (uterine or ectopic pregnancy).
- FBC - infection, haemorrhage.
- Urinalysis - if there are urinary symptoms.
- Ultrasound - a pelvic ultrasound is the single most effective way of evaluating an ovarian mass. Trans-vaginal ultrasonography is preferable due to its increased sensitivity over trans-abdominal ultrasound.
- CT or MRI scan - usually required only if ultrasound results are not definitive or if intra-abdominal pathology is suspected.
- Diagnostic laparoscopy may be performed in some cases.
- Fine-needle aspiration and cytology may be used to confirm the impression that a cyst is benign.

Management

Many patients with simple ovarian cysts based on ultrasound findings do not require treatment.

Expectant management

- Women with small (less than 50 mm diameter) simple ovarian cysts generally do not require follow-up, as these cysts are very likely to be physiological and almost always resolve within three menstrual cycles.
- Women with simple ovarian cysts of 50-70 mm in diameter should have yearly ultrasound follow-up and those with larger simple cysts should be considered for either further imaging (MRI) or surgical intervention. In a postmenopausal patient, a persistent simple cyst smaller than 5 cm in dimension in the presence of a normal CA-125 value may be monitored with serial ultrasonography examinations.
- However, ovarian cysts that persist or increase in size are unlikely to be functional and may need surgical management.

Oral contraceptives

- The oral contraceptive pill is not recommended, as its use has not been shown to promote the resolution of functional ovarian cysts.

Surgery

- If conservative measures fail or criteria for surgery are met, surgical therapy for benign ovarian tumours is generally very effective and provides a cure with minimal effect on reproductive capacity.
- Persistent simple ovarian cysts larger than 5-10 cm, especially if symptomatic and complex ovarian cysts should be considered for surgical removal.
- In children and younger women (wishing to preserve maximum fertility), cystectomy may be preferable to oophorectomy.
- Laparoscopic surgery for benign ovarian tumours is associated with reduced risk of any adverse effect of surgery, reduced pain, and fewer days in hospital compared with laparotomy, in the small number of studies identified. There was no difference between the procedures with regard to outcomes of fever, postoperative infections and tumour recurrence.

Ovarian torsion:

- Usually initially treated by laparoscopy with uncoiling of the affected ovary and possible oophoropexy.
- Salpingo-oophorectomy may be indicated if there is severe vascular compromise, peritonitis or tissue necrosis.
- Immediate surgical intervention is indicated for a haemorrhagic cyst.
- Laparoscopy will need to be upgraded to laparotomy when malignancies are discovered.
- Pseudomyxoma peritonei is treated by surgical debulking.

Complications

- Torsion of an ovarian cyst can occur.
- Haemorrhage is more common for tumours of the right ovary.
- Rupture of an ovarian cyst can occur.
- Infertility can occur as a result of ovarian tumours or their treatment.
- Prognosis
- This is variable and depends on the type and size of tumour, associated complications and patient's age.
- Most small ovarian cysts in premenopausal women will resolve spontaneously.
- Ovarian torsion: if operated within six hours of onset of symptoms, tissue will usually remain viable.
- Prognosis of surgically removed cysts ultimately depends on the histology.

Self Test

For each of the following, indicate True or False (T/F)

1. The complications of an ovarian cyst include torsion, rupture and haemorrhage (T)
2. Infertility in women can occur as a result of ovarian tumours (T)
3. Height is one of the risk factors to development of fibroids. (F).
4. Some of the causes of male infertility are smoking and hard work. (F)
5. Treatment of infertility depends on the cause.

ANSWERS

Q1:T, Q2: T,Q3:F,Q4:F,Q5:T

You are encouraged not to limit yourself to only these few questions above, but practice many times in order to enhance your understanding.

Malignant Tumours

Cervical Carcinoma

Welcome to today's discussion, during the last discussion we learn about malignant tumours. Today we shall go a little further to discuss cervical carcinoma.

Cervical cancer is cancer that starts in the cervix, the lower part of the uterus. It is the third most common cancer in women worldwide. Cervical cancer remains a significant cause of morbidity and mortality in developing countries due to the lack of access to early detection and treatment services. Globally, estimated halves a million cases are detected and over a quarter million women die from cervical cancer each year. More than 80% of these women reside in resource-limited nations that have access to less than 5% of the global health resources. And Zambia is not un exception, many women have this problem, while others have died, and yet there have not had any access to treatment and care. The government of Zambia used to spend about K50 million to send one cancer patient to South Africa and Zimbabwe for treatment before the cancer disease hospital was established. On statistics from 1995 to 2004 there were 5,000 cancer cases that required radiotherapy abroad. Only 350 received treatment and the rest died because they could not be treated.

During the course of this discussion, we are going to learn about what cervical carcinoma is and other related terms, learn about the risk factors, the signs and symptoms, staging in terms of disease progression and its treatment and care.

Terms used under carcinoma of the cervix are as follows; **Cervical Cancer**
Cervical carcinoma is cancer that forms in tissues of the cervix (the organ connecting the uterus and vagina). It is usually a slow-growing cancer that may not have symptoms but can be found with regular Pap tests. Cervical cancer is almost always caused by human papilloma virus (HPV) infection (stedmans' electronics medical dictionary, 2009)

Papanicolaou smear

A procedure in which cells are scraped from the cervix and visualised under a microscope (Shirley, 2001)

Radiotherapy

The use of radiations in the treatment of neoplasms (Stedman's, 2009)

Chemotherapy

Treatment of disease by use of chemical substances or drugs usually used in reference to neoplastic disease (Stedmans, 2009)
We now need to learn about the disease process which is outlined below.

Pathophysiology of pre-invasive and invasive cervical carcinoma

Cervical cancers start in the cells on the surface of the cervix. There are two types of cells on the cervix's surface. These are squamous and columnar. Most cervical cancers are from squamous cells. Cervical cancer usually develops very slowly. It starts as a precancerous condition called dysplasia. Undetected precancerous changes can develop into cervical cancer and spread to the bladder, intestines, lungs, and liver. It can take years for precancerous changes to turn into cervical cancer. Patients with cervical cancer do not usually have problems until the cancer is advanced and has spread.

Almost all cervical cancers are caused by HPV (human papilloma virus). HPV is a common virus that is spread through sexual intercourse. The human papillomavirus (HPV) is a non-enveloped double-stranded DNA virus that belongs to the Papillomaviridae family (Over 100 different HPV genotypes have been isolated to date) More than 40 of these types infect the epithelial and mucosal lining of the ano-genital tract and other areas. HPV strains can be practically classified by their risk of causing cervical cancer into low-risk (for example HPV-6 and -11) and high-risk (for example HPV-16 and -18) types.

The *E6* gene introduced by the virus inhibits the p53 gene, the central cellular switch for apoptosis (the process by which damaged cells kill themselves). The mitosis rate accelerates, and the cell accumulates more DNA damage that makes it capable of invading other tissues.

Commonly, carcinoma develops from the vagina surface of the cervix and less often from the cervical canal. It may form an ulcer on the cervix or become fungating cauliflower type growths and is of the squamous cell type. Tissue becomes eroded and infected forming an unpleasant vaginal discharge.

Risk Factors

- **Cigarette Smoking**

Women who smoke are about twice as likely as non-smokers to get cervical cancer. Smoking exposes the body to many cancer-causing chemicals (Nicotine) that affect organs other than the lungs. These harmful substances are absorbed through the lungs and carried in the bloodstream throughout the body. Tobacco by-products have been found in the cervical mucus of women who smoke. Smoking also makes the immune system less effective in fighting HPV infections.

- **Immunosuppression**

Human immunodeficiency virus (HIV), damages the body's immune system and places women at higher risk for HPV infections. This may explain the increased risk of cervical cancer for women with AIDS. The immune system is important in destroying cancer cells and slowing their growth and spread. In women with HIV, a cervical pre-cancer might develop into an invasive cancer faster than it normally would. Another group of women at risk of cervical cancer are women receiving drugs to suppress their immune response, such as those being treated for an autoimmune disease (in which the immune system sees the body's own tissues as foreign and attacks them, as it would a germ) or those who have had an organ transplant.

- **Chlamydia infection**

Chlamydia is a relatively common kind of bacteria that can infect the reproductive system. It is spread by sexual contact. Chlamydia infection can cause pelvic inflammation, leading to infertility and have seen a higher risk of cervical cancer in women whose blood test results show evidence of past or current chlamydia infection (compared with women who have normal test results). Infection with chlamydia often causes no symptoms in women. A woman may not know that she is infected at all unless she is tested for chlamydia when she gets her pelvic exam.

- Diet - Women with diets low in fruits and vegetables may be at increased risk for cervical cancer. Also overweight women are more likely to develop adenocarcinoma of the cervix.
- Oral contraceptives (birth control pills) - There are evidence that taking oral contraceptives (OCs) for a long time increases the risk of cancer of the cervix. The risk of cervical cancer goes up the longer a woman takes OCs, but the risk goes back down again after the OCs are stopped.
- Young age at the first full-term pregnancy - Women who were younger than 17 years when they had their first full-term pregnancy are almost 2 times more likely to get cervical cancer later in life than women who waited to get pregnant until they were 25 years or older.
- Poverty

Poverty is also a risk factor for cervical cancer. Many women with low incomes do not have ready access to adequate health care services, including Pap tests. This means they may not get screened or treated for cervical pre-cancers.

- **Family history of cervical cancer**

Cervical cancer may run in some families. If your mother or sister had cervical cancer, your chances of developing the disease are 2 to 3 times higher than if no one in the family had it.

- **Sexual history**

Women who have had many sexual partners have a higher risk of developing cervical cancer. Also, a woman who has had sex with a man who has had many sexual partners may be at higher risk of developing cervical cancer. In both cases, the risk of developing cervical cancer is higher because these women have a higher risk of HPV infection.

Signs and Symptoms

Most of the time, early cervical cancer has no symptoms. Symptoms that may occur can include:

- Vaginal bleeding between periods, after intercourse, or after menopause
- Any bleeding after menopause
- Continuous vaginal discharge, which may be pale, watery, pink, brown, bloody, or foul-smelling
- Menses become heavier and last longer than usual

Symptoms of advanced cervical cancer may include:

- Back pain
- Fatigue
- Heavy bleeding from the vagina
- Leaking of urine or feces from the vagina due to fistula formation.
- Loss of appetite
- Pelvic pain

Staging of cervical cancer

Once cervical cancer has been diagnosed the stage needs to be determined. A stage reveals how much the cancer has progressed. Cervical Cancer has five different categories in its staging system.

The system used is referred to as the 'Figo' system (International Federation of Gynecology and Obstetrics).

Stage 0 indicates early cervical cancer, while stage 4 indicates advanced cervical cancer. The stage at diagnosis is one factor that determines the treatment options available.

Stage 0:

Also called "carcinoma in situ", stage 0 indicates non-invasive cervical cancer. In this stage, cancerous cells are only found on the surface of the cervix. Stage 0 cervical cancer is highly treatable and has an excellent survival rate.

Stage I - : The tumour has invaded the cervix beneath the top layer of cells. Cancer cells are found only in the cervix.

IA – there are no visible lesions and is less than mm in depth.

I _neoplasm confined to the cervix.

Stage II - The tumour extends to the upper part of the vagina. It may extend beyond the cervix into nearby tissues toward the pelvic wall (the lining of the part of the body between the hips). The tumour does not invade the lower third of the vagina or the pelvic wall.

IIA – neoplasm has infiltrated adjacent parametric tissue or upper vagina. If the carcinoma is endo cervical, then it has extended up into the uterus.

IIB – tumour extending to the parametrium but not to the pelvic wall

Stage III - extends to pelvic wall or lower 1/3 of the vagina.

IIIA - involves lower 1/3 of vagina

IIIB - extends to pelvic wall and/or causes hydronephrosis or non-functioning kidney

Stage IV: The tumour invades the bladder or rectum. Or the cancer has spread to other parts of the body.

IVA - invades mucosa of bladder or rectum and/or extends beyond true pelvis

IVB - distant metastasis

Investigations

Precancerous changes of the cervix and cervical cancer cannot be seen with the naked eye. Special tests and tools are needed to spot such conditions.

- Pap smears screen for precancers and cancer, but do not make a final diagnosis.
- If abnormal changes are found, the cervix is usually examined under magnification. This is called colposcopy. This is a binocular optical device used to magnify and illuminate the cervical tissues. Pieces of tissue are surgically removed during this procedure and sent to the laboratory for examination.

Other tests may include:

- Endo-Cervical Curettage (ECC) to examine the opening of the cervix at the time of colposcopic examination.
- Cone biopsy for endocervical disease and exocervical disease.

If the woman is diagnosed with cervical cancer, the health care provider will order more tests to determine how far the cancer has spread. Tests may include:

- Chest x-rays: X-rays often can show whether cancer has spread to the lungs.
- CT scan: Takes a series of detailed pictures of organs. A tumour in the liver, lungs, or elsewhere in the body can show up on the CT scan.
- MRI: is used to make detailed pictures of pelvis and abdomen. The doctor can view these pictures on a monitor and can print them on film. An MRI can show whether cancer has spread.

Treatment

Treatment of cervical cancer depends on:

- The stage of the cancer
- The size and shape of the tumour
- The woman's age and general health

- Her desire to have children in the future

Early cervical cancer can be cured by removing or destroying the precancerous or cancerous tissue. There are also various surgical ways to do this without removing the uterus or damaging the cervix, so that a woman can still have children in the future.

Types of surgery for early cervical cancer include:

- Loop Electrosurgical Excision Procedure (LEEP) -- uses electricity to remove abnormal tissue
- Cryotherapy -- freezes abnormal cells
- Laser therapy -- uses light to burn abnormal tissue

A hysterectomy (removal of the uterus but not the ovaries) is not often performed for cervical cancer that has not spread. It may be done in women who have repeated LEEP procedures.

Treatment for more advanced cervical cancer may include:

- Radical hysterectomy; which removes the uterus and much of the surrounding tissues, including lymph nodes and the upper part of the vagina.
- Pelvic exenteration; an extreme type of surgery in which all of the organs of the pelvis, including the bladder and rectum, are removed.

Advantages of radical approach

- It provides the need for radiotherapy and can maintain ovarian function.

Disadvantages

- Includes alteration in bowel and bladder function
- Loss of child bearing function

Radiotherapy

Radiation may be used to treat cancer that has spread beyond the pelvis, or cancer that has reoccurred. Radiation therapy is either external or internal. It inhibits cancer cell growth and reduce the blood supply to the cancer cell.

Indication for radiotherapy

Stages three and four of the carcinoma

- Internal radiation therapy (brachytherapy) uses a device filled with radioactive material, which is placed inside the woman's vagina next to the cervical cancer.
- External radiation therapy beams radiation from a large machine onto the body where the cancer is located. It is similar to an x-ray. This is called teletherapy.

Advantages of radiotherapy

- It can be given on an out-patient basis
- It avoids intra operative and post operative complications
- Has a short course treatment

Disadvantages of radiotherapy

1. It has long term effects of radiation on normal tissue such as bladder damage, fistula formation, vagina stenosis and ureteral obstruction

Side Effects of Radiation Therapy

Side effects of radiation vary from patient to patient. It all depends on how often treatment is given and at what degree. The three most commonly experienced side effects are:

- **Fatigue**
  All radiation patients experience some degree of fatigue during treatment. This is the time when a cancer patient should really utilize her support system to help with chores, errands, child care and other small tasks. Short naps throughout the day and getting uninterrupted sleep at night really make a difference in a person's energy level.

- **Skin Problems**

- The skin that has been exposed to treatment may appear red, sunburned, tan, or irritated. The skin is very sensitive and should be treated as so. Patients should avoid perfumes or scented body lotions, tight fitting clothing, and exposing the area to sun (during treatment and for at least one year after).

- **Loss of Appetite**
- Loss of appetite can lead to fatigue and nutritional deficiencies. It is very important to keep up strength during any cancer treatment, and nutrition is one of the best resources to do that.

Chemotherapy

Use drugs to kill cancer. Some of the drugs used for cervical cancer chemotherapy include doxorubicin, methotrexate, and cyclophosphamide. Sometimes radiation and chemotherapy are used before or after surgery.

A) Cyclophsphomide

Dose: 40-50mg/kg iv in divided doses.

Action: close links strands of cellular DNA and interferes with RNA transcription leading to cell death.

Side effects

Cardio-toxitiy, anorexia, nausea and vomiting, fertility impairment, reversible alopecia

B) Methotrexate

Dose: 10-25 mg orally 4 to 8 days.

Side effects

Acute toxicity of the liver, thrombocytopaenia, anaemia, skin rashes, alopecia and others

C) Doxorubicin

Dose: 60 -75mg/ m2 as a single dose for three weeks

Action: interferes with DNA dependent RNA synthesis.

Side effects: cardiac depression, nausea and vomiting, leucopenia, urticaria, complete alopecia among others.

D) Fluorouracil

Dose: 12mg/kg IV

Action: inhibits DNA synthesis.

Side effects

Nausea or vomiting, Poor appetite, Hair loss or changes in hair colour or texture, Mouth and lip sores or skin rash, Low levels of blood cells, which can make you more susceptible to infections, Increased bleeding or bruising due to minor injuries, Tingling and numbness of hands and feet, Problems with hearing or balance, Balance problems, Joint pain or swelling in the legs and feet, Shortness of breath, Weakness and fatigue, Premature menopause, Infertility.

Take Note:

For pregnant women treatment is withheld until after delivery. For women at four weeks gestation the pregnancy is terminated. The risk of delaying treatment for fetal development must be weighed against the risk of progress disease. After 28 weeks gestation the fetus is delivered by caesarean section to reduce the risk of maternal bleeding and the risk of spreading the disease.

Follow up after treatment

After treatment for cervical cancer, all patients are examined on a scheduled frequency. At three months interval for the first year, 3-4 months during the 2nd year, every 6 months for the next three years then annually, beginning five years after treatment

Prevention of cervical cancer

A vaccine to prevent cervical cancer is now available which prevents infection against the two types of HPV responsible for most cervical cancer cases.

Practicing safe sex (using condoms) also reduces your risk of HPV and other sexually transmitted diseases. HPV infection causes genital warts.

To further reduce the risk of cervical cancer, women should limit their number of sexual partners and avoid partners who participate in high-risk sexual activities.

Getting regular Pap smears can help detect precancerous changes, which can be treated before they turn into cervical cancer. Pap smears effectively spot such changes, but they must be done regularly. Annual pelvic examinations, including a pap smear, should start when a woman becomes sexually active, or by the age of 20 in a non-sexually active woman.

Quit Cigarette smoking is associated with an increased risk of cervical cancer.

Dietary modification by increasing engestion of food rich in vitamin A & C

Activity:

Get your note and state the stages of cervical cancer.

Well done, you are progressing well indeed; now proceed to the next topic, on endometrial carcinoma.

Endometrial Carcinoma (Uterine Cancer)

Worldwide the highest incidences of endometrial cancer occur in North America, Europe and South America. Endometrial cancer is a disease in which malignant (cancer) cells form in the tissues of the endometrium. This condition is more common with advancing age, most cases occurring in the sixth and seventh decades. The condition is associated with infertility, diabetes mellitus, oestrogen replacement therapy, obesity and hypertension. In developed countries, adenocarcinoma of the endometrium is the most common gynecological cancer. However, in developing countries, it is much less common than carcinoma of the cervix. Approximately 95% of these malignancies are carcinomas of the endometrium. The most common symptom in 90% of women is postmenopausal (PMP) bleeding. Most women recognize the need for prompt evaluation, although only 10-20% of women with postmenopausal vaginal bleeding have a gynecologic malignancy. Because of this prompt evaluation, 70-75% of women are diagnosed with surgical stage I disease (emedicine.medscape, 2011)

Tumours in the uterus can be benign (not cancer) or malignant (cancer). Benign tumours are not as harmful as malignant tumours:

Pathophysiology

The endometrial carcinoma originates from the columnar epithelium that covers the surface of the endometrium. The growth is usually an adenocarcinoma. In a small number of cases of adenocarcinoma, there may be a squamous metaplasia. The squamous element may be benign or malignant. The carcinoma develops in an atrophic senile uterus. The lesion penetrates the endometrium, spreads laterally and grows slowly. It further penetrates the myometrium, reaching the peritoneal covering, and involving the glands. Further spread may affect the pelvic and aortic lymph nodes and the ovary. Late blood-borne complications as a result of metastases may involve the lungs, bone, liver or the brain.

Etiology and risk factors

Although the etiology of endometrial cancer is unknown**, t**he most common cause of endometrial cancer is having too much of the hormone estrogen compared to the hormone progesterone in the body. This hormone imbalance causes the lining of the uterus to get thicker and thicker. If the lining builds up and stays that way, then can lead to hyperplasia and cancer

Women who have this hormone imbalance are likely to get endometrial cancer after age 50. This hormone imbalance can happen if a woman:

- Is obese. Fat cells make extra estrogen, but the body doesn't make extra progesterone to balance it out.
- Takes estrogen without taking a progestin.
- Has polycystic ovary syndrome, which causes hormone imbalance.
- Starts her period before age 12 or starts menopause after age 55.
- Has never been pregnant or had a full-term pregnancy.
- Has never breast-fed

Take Note:

Increase in estrogen levels causes hyperplasia (An increase in number of normal cells in a tissue or organ, excluding tumour formation, whereby the bulk of the part or organ may be increased) of endometrium.

Classification of endometrial cancer

The primary types of endometrial cancer are adeno-carcinoma, sarcomas, mucinous carcinoma, clear cell carcinoma and epidermoid carcinoma.

More than 95% are endometrial adenocarcinomas and less than 5% are sarcomas.

Clinical features.

The most common symptoms of endometrial cancer include:

- Prolonged, excessive or irregular premenopausal or post menopausal bleeding.
- Yellow waterly vaginal discharge.
- pyometria
- Pain during sexual intercourse.
- Hematometria
- Pain in the hypogastric or lambar sacro areas or pelvis

Advanced disease may present with;

- Intestinal obstruction
- Ascites
- Jaundice
- Respiratory disease
- Haemorrhage.
- Enlarged inguinal lymph nodes
- Tumours may be palpated in the vagina, bowels, bladder or vagina.

Staging of uterine cancer

The following stages are used for endometrial cancer :(Figo Stage)

Stage I

In stage I, cancer is found in the uterus only. Stage I is divided into stages IA, IB and 1C, based on how far the cancer has spread.

- Stage IA: Cancer is in the endometrium only.
- Stage IB: Cancer has spread halfway or less into the myometrium.
- Stage 1C: tumour invades to more than one-half of the myometrium.

Stage II

In stage II, cancer has spread into connective tissue of the cervix, but has not spread outside the uterus. It is divided into two, IIA and IIB.

Stage IIA endocervical glandular involvement onl

Stage IIB cervical stromal invasion

Stage III

In stage III, cancer has spread beyond the uterus and cervix, but has not spread beyond the pelvis. Stage III is divided into stages IIIA, IIIB, and IIIC, based on how far the cancer has spread within the pelvis.

- Stage IIIA: Cancer has spread to the outer layer of the uterus and/or to the fallopian tubes, ovaries, and ligaments of the uterus.
- Stage IIIB: Cancer has spread to the vagina or to the parametrium
- Stage IIIC: Cancer has spread to the lymph nodes in the pelvis and/or around the aorta

Stage IV

In stage IV, cancer has spread beyond the pelvis. Stage IV is divided into stages IVA and IVB, based on how far the cancer has spread.

- Stage IVA: Cancer has spread to the bladder and/or bowel wall.
- Stage IVB: Cancer has spread to other parts of the body beyond the pelvis, including the abdomen and/or lymph nodes in the groin.

Diagnosis and tests

Most cases of endometrial cancer are diagnosed in an early stage. This is because women who have reached menopause usually see their doctors when they have vaginal bleeding. Medical history to rule out risk factors and physical examination are done. The physical exam will include evaluation of the size, consistence and shape of the uterus. This is determined by palpation on the rectal vaginal, bimanual examination..

An endometrial biopsy is needed to confirm a diagnosis of endometrial cancer.

Additional tests may include:

- A transvaginal pelvic ultrasound. The images can show how thick the endometrium is. A thick endometrium can be a sign of cancer
- Hysteroscopy to view the inside of the uterus and obtain an endometrial tissue sample.
- Dilation and curettage, which is done to obtain a sample of tissue from the inside of the uterus.

Treatment

There are different types of treatment for patients with endometrial cancer.

Three types of standard treatment are used:

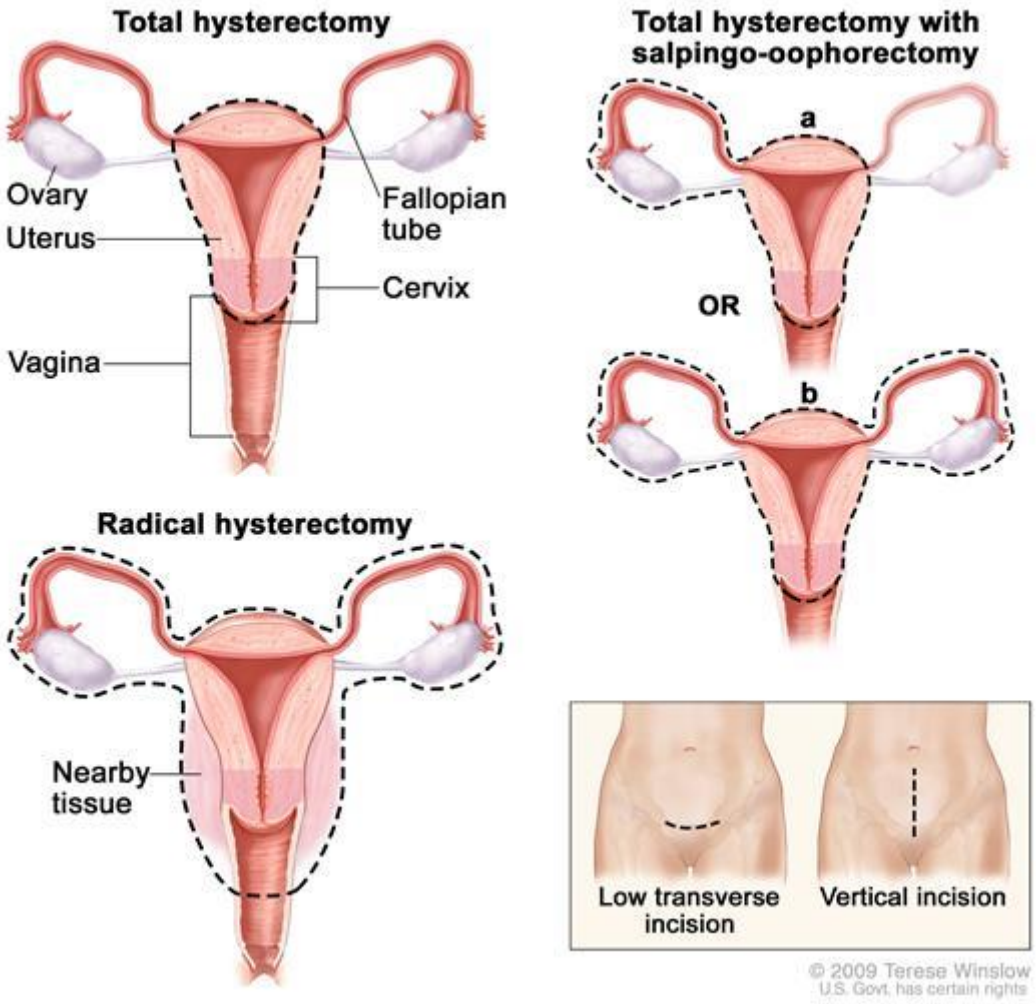
Surgery

Surgery (removing the cancer in an operation) is the most common treatment for endometrial cancer. The following surgical procedures may be used:

Indication

Most endometrial cancers are diagnosed as stage I tumours. In fact, most endometrial cancer (Stage 1&2) can be cured with surgery alone, and relatively few patients need adjuvant radiotherapy.

Total hysterectomy: Surgery to remove the uterus, including the cervix. If the uterus and cervix are taken out through the vagina, the operation is called a vaginal hysterectomy. If the uterus and cervix are taken out through a large incision (cut) in the abdomen, the operation is called a total abdominal hysterectomy. If the uterus and cervix are taken out through a small incision (cut) in the abdomen using a laparoscope, the operation is called a total laparoscopic hysterectomy.



Bilateral salpingo-oophorectomy: Surgery to remove both ovaries and both fallopian tubes.

Radical hysterectomy: Surgery to remove the uterus, cervix, and part of the vagina. The ovaries, fallopian tubes, or nearby lymph nodes may also be removed.

Even if all the cancer that can be seen at the time of the surgery, some patients may be given radiation therapy after surgery to kill any cancer cells that are left. Treatment given after the surgery to lower the risk that the cancer will reoccur is called adjuvant therapy.

Radiation therapy

Radiation therapy is a cancer treatment that uses high-energy x-rays or other types of radiation to kill cancer cells or keep them from growing. There are two types of radiation therapy.

External radiation therapy; uses a machine outside the body to send radiation toward the cancer.

Internal radiation therapy; uses a radioactive substance sealed in needles, seeds, wires, or catheters that are placed directly into or near the cancer. The way the radiation therapy is given depends on the type and stage of the cancer being treated.

Hormone therapy

Hormone therapy is a cancer treatment that removes hormones or blocks their action and stops cancer cells from growing. High doses of medroxyprogestorone acetate (depo-provera) are used.

Chemotherapy

Chemotherapy is a cancer treatment that uses drugs to stop the growth of cancer cells, either by killing the cells or by stopping the cells from dividing. When chemotherapy is taken by mouth or injected into a vein or muscle, the drugs enter the bloodstream and can reach cancer cells throughout the body (systemic chemotherapy). When chemotherapy is placed directly into the cerebrospinal fluid, an organ, or a body cavity such as the abdomen, the drugs mainly affect cancer cells in those areas (regional chemotherapy). The way the chemotherapy is given depends on the type and stage of the cancer being treated.

Indication of chemotherapy

Anti-neoplastic agents are reserved for women who have estrogen/progesterone negative tumours, who have failed hormonal therapy or who have disseminated disease.

Drugs include;

A) Vincrisitne

Dose: 1.4mg/m2 IV weekly

Action: arrest mitosis in metaphase, block cell division.

Side effects: peripheral neuropathy, headache, ataxia, diarrhoea, stomatitis**.**

B) Cisplatin

Dose: 50-70mg/m2 IV stat. repeated after 3-4 weeks

Action: interfere with RNA transcription, causing an imbalance of growth leading to cell death.

Side effect: peripheral neuritis, anorexia, ototoxicity, leucopenia among others

C) Doxorubicin

Dose: 60 -75mg/ m2 as a single dose for three weeks

Action: interferes with DNA dependent RNA synthesis.

Side effects: cardiac depression, nausea and vomiting, leucopenia, urticaria, complete alopecia among others.

Prevention

The primary focus of prevention is targeted towards high risk women.

- Maintenance of ideal body weight to avoid obesity and decrease the risk of hypertension and diabetes.
- Treatment of premalignant changes of the endometrium such as endometrial hyperplasia with progesterone.
- Advise women of menopausal age or older to have yearly pelvic examination or pap smear.

Nursing care of the patient with endometrial or cervical cancer

The nursing care to the patient with a cancer of the uterus and cervix involves pre and post operative care for hysterectomy, before and after radiotherapy and general care. Care would be individualized but will be similar to that of the patient with carcinoma of the cervix.

Nursing care of patients with cancer of the uterus depends on the stage of cancer and the intervention taken. However, these patients may experience a variety of clinical manifestation, including leucorrhea, irregular vaginal bleeding, vaginal discharge, increase in abdominal pain and pressure, bowel and bladder dysfunction and vulvar itching and burning. Assessment for these signs and symptoms is an important nursing responsibility. Some of the nursing problems for these patients may include:

- Anxiety related to threat of a malignancy and lack of knowledge about the disease process and prognosis.
- Altered nutritional status related to nausea and vomiting or anorexia occurring with chemotherapy or disease process.
- Acute/chronic pain related to direct tumour involvement and infiltration of tumour into nerves and surrounding tissues or post-chemotherapy or post-radiotherapy syndrome
- Ineffective sexuality patterns related to the disease process, psychosocial issues, radiotherapy, or surgery..
- Ineffective breathing pattern related to presence of ascites and effusion if the cancer has metastasized to the lungs and liver.
- Anticipatory grieving related to poor prognosis of advanced disease.

Nursing management according to specific nursing problems identified

1. **Anxiety**:

A woman may experience considerable anxiety related to fear of the malignancy, lack of knowledge about the disease process and prognosis. The relationship with her partner may appear threatened by the surgery, particularly if her childbearing potential is lost. A change in body image, a sense of loss and some alteration in sexuality and sexual identity may be a source of fear. The patient may be worried that her illness will affect her ability to work and support the family in future.

Nursing interventions:

A gentle approach by the nurse may help the patient to speak about her main concerns. Allow the patient/family to express their concerns and fears about the disease that will help the nurse to identify the cause of anxiety. The nurse should reassure the patient that anxiety is quite normal in relation to cancer. The nurse can reframe the patient's perception of potential threat in order to reduce stress and anxiety. The nurse should explain the disease process and available treatment strategies to the patient and family (especially the partner) so that they can understand the disease prognosis and gain their cooperation during patient care. The nurse should effectively incorporate other resources such as the family members to offer emotional support to the patient, the priest to meet the patient's spiritual needs, the partner to discuss other ways of express sexual feelings, encourage the patient to maintain her personal hygiene and appearance to promote

self esteem. The aim of providing the above mentioned psychological support to the patient is to assist with the improvement in the quality of their lives, allowing them to become more empowered; to help take control and enhance their self esteem.

2. **Altered nutritional status less than body requirements**:

The woman may experience altered nutritional status related to nausea and vomiting or anorexia occurring with chemotherapy or disease.

Nursing interventions:

For anorexia

The nurse should assess the patient on the food she likes and dislikes, as well as cultural and religious preferences related to food choices so that she can come up with a list of feasible foods that will optimally promote sufficient intake. The nurse should suggest that patient should eat small meals at frequent intervals throughout the day, as smaller meals are better tolerated than large meals.

Teach the importance of increasing the intake of mixed diet rich in proteins and calories that is attractively prepared in order to increase patient's energy, minimize weight loss, and to promote tissue repair and regeneration of cells.

The nurse should encourage the use of nutritional supplements (vitamin A, iron tablets) that will promote nutritional intake that will meet body requirements.

For nausea and vomiting

Assess patient's pattern of nausea and vomiting: onset, frequency, duration, amount and character of emesis. The knowledge about the pattern of nausea and vomiting enables the use of proper medication, route and timing. Explain to the patient that nausea and vomiting may be side effects of chemotherapy and radiation therapy or that it may occur due to advanced cancer or metabolic abnormalities. This knowledge will help to relieve the anxiety that may come with nausea and vomiting. Therefore, the nurse should encourage patient to avoid eating foods or drinking fluids 1-2 hrs before and after meals if anticipatory nausea occurs. Suggest the intake of clear liquids and bland foods to prevent odour and unpleasant tastes that can stimulate nausea or suppress appetite. Minimize stimuli such as offensive odour, or sights in order to prevent previous stimuli associated with nausea which may provoke anticipatory nausea. Teach the patient to avoid sweet, fatty, highly salted and spicy foods, and foods with strong odour. This is because strong doors and tastes can stimulate nausea and suppress appetite.

3. **Acute/Chronic pain**

A woman may experience acute or chronic pain related to disease process, direct tumour involvement, infiltration of tumour into nerves or surrounding tissues, or due to post-chemotherapy or radiotherapy syndrome

Nursing interventions:

Whether acute or chronic, the nurse should explain physiologic and other causes of pain, and discuss the pain relief strategies with patient and significant others in order to promote the patient's level of knowledge, understanding and compliance with pain relief strategies. The nurse should assess the pain with a pain scale that is appropriate and comfortable for patient, for example use of numeric scale would require patient to rate pain from 0 (none) to 10 (worst). Because using pain scare provides an objective measurement that enables the health care team to assess effectiveness of pain management strategies. Assess patients and care giver/s attitude and knowledge about the pain medication regimen in order to dispel any misperceptions about narcotic induced addiction when chronic pain therapy is necessary. Fear of addiction may result in ineffective pain management. Administer opioid and nonopioid analgesics in the correct dose, at the correct frequency, and via the correct route, because chronic cancer is more effective when given around the clock (at scheduled intervals) rather than as needed. Recognize the potential for physical dependence in patients taking opioids for a prolonged period. Reassure the patient that this dependence is physiological and not psychological. Provide diversion therapy to keep patient from concentrating on pain.

4. **Sexual dysfunction**:

Ineffective sexuality patterns related to the disease process, psychosocial issues, radiotherapy, or surgery.

Nursing interventions:

Determine patient's readiness to discuss sexual concerns. Gentle, sensitive, open-ended questions allow patient to signal their readiness to discuss concerns. Assess the impact of diagnosis and treatment on patients sexual functioning and self-concept because sexual dysfunction affects every individual differently. It is important not to assume its meaning, but rather explore it with the individual and allow her to give meaning to changes. Discuss the possibility of decreased sexual response or desire which may result from side effects of therapy, this is to allay unnecessary anxiety.

Encourage patient to maintain open communication with partner about sexual needs and concerns. This discussion may help to explore alternate methods of sexual fulfilment, such as hugging, kissing, talking quietly together, or massage. Suggest the use of water-based lubricant if dyspareunia or fatigue is a problem, changing the usual time of day for intimacy, or using supine or side-lying positions that require less energy. Discuss the possibility of temporary or permanent sterility, which can be a result of treatment for women undergoing abdominal radiation therapy or radical hysterectomy.

Smear at the onset of sexual activity. . There is indeed a great need by the government of Zambia and the world at large to put effort on the treatment of cancer and early diagnosis.

Self Test

Write true or false

1.40 to 45 years is the age group in which endometrial carcinoma is common. The following are clinical features of endometrial carcinoma; Prolonged, excessive or irregular premenopausal or post menopausal bleeding, Yellow watery vaginal discharge., plyometric, Pain during sexual intercourse and Hematometria

3. The following surgical procedures can be performed on patients with endometrial carcinoma; Total hysterectomy (ii) Radical hysterectomy (iii) Bilateral salpingo-oophorectomy

4. Alopecia is a side effect of chemotherapy that is visibly observed

Check correct responses in the next box

Answers

1. **False**
2. **True**
3. **True**
4. **True**

OVARIAN CARCINOMA

Ovarian cancer is a type of cancer that begins in the ovaries. Women have two ovaries, one on each side of the uterus. The ovaries — each about the size of an almond — produce eggs (ova) as well as the hormones estrogen, progesterone

and testosterone. The ovary is the common site of primary as well as metastic lesion from other cancers. Most of the cases affect women in the age group 50-59. The incidence of ovarian cancer is in high industrialized countries.

Under this topic, we shall learn how to manage a patient with ovarian carcinoma.

Causes and risk factors of ovarian cancer

The cause of ovarian cancer is unknown

Risk factors include;

- Women over the age of 40 yrs
- Family history of ovarian cancer
- Nulliparity
- History of infertility
- History of heavy menstrual bleeding and dysmenorrhoea
- North America or North European descent
- Personal history of endometrial, colon or breast cancer
- Obesity, especially with high intake of animal fat

Types of ovarian cancer

The type of cell where the cancer begins determines the type of ovarian cancer you have. Ovarian cancer types include;

- Epithelial tumours, these cancers begin in the thin layer of tissue that covers the outside of the ovaries. Most ovarian cancers are epithelial tumours.
- Germ cell tumours, these ovarian cancers that begin in the egg forming cells. They tend to occur in younger women.
- Stromal tumours begin in the ovarian tissue that produces the hormones estrogen, progesterone and testosterone.

Stages of ovarian cancer include:

- **Stage I.** Ovarian cancer is confined to one or both ovaries.
- **Stage II.** Ovarian cancer has spread to other locations in the pelvis, such as the uterus or fallopian tubes.
- **Stage III.** Ovarian cancer has spread beyond the pelvis or to the lymph nodes within the abdomen.
- **Stage IV.** Ovarian cancer has spread to organs beyond the abdomen, such as the liver or the lungs.

Management of ovarian cancer

Investigations

- Palpation of the abdominal organs may reveal masses
- Exploratory laparotomy and lymph node evaluation will be required for accurate diagnosis
- Abdominal ultrasonography and computer tomography will demonstrate the tumour size
- Excretory urography will demonstrate the renal function and possible urinary tract obstruction
- Chest x-ray can help identify distance metastasis and pleural effusion
- Barium enema may reveal any obstruction and tumour size
- Lymphangiography will reveal lymph node involvement.

Treatment

Treatment depends on the cancer's stage and the patient's age. Treatment requires varying combinations of surgery, chemotherapy and radion therapy.

- **Surgery**
  Treatment for ovarian cancer usually involves an extensive operation that includes removing both ovaries, fallopian tubes, and the uterus as well as nearby lymph nodes and a fold of fatty abdominal tissue known as the omentum, where ovarian cancer often spreads. Your surgeon also removes as much cancer as possible from your abdomen (surgical debulking).
- Less extensive surgery may be possible if your ovarian cancer was diagnosed at a very early stage. For women with stage I ovarian cancer, surgery may involve removing one ovary and its fallopian tube. This procedure may preserve the ability to have children.
- **Chemotherapy**
  After surgery, you'll most likely be treated with chemotherapy — drugs designed to kill any remaining cancer cells. Chemotherapy may also be used as the initial treatment in some women with advanced ovarian cancer. Chemotherapy drugs can be given in a vein (intravenously) or injected directly into the abdominal cavity, or both methods can be used. The drugs used include; melphalan, chlorambucil, methotrexate, doxorubicin, vincrestine and cisplatin. These drugs are given in combination.

Nursing care

As the patient using the following nursing diagnosis;

- Altered growth and development (if the patient is a child)
- Altered nutrition less than body requirement
- Anticipatory grieving
- Anxiety
- Fear
- Risk of Fluid volume excess during IVF infusion
- High risk for infection
- Impaired skin integrity
- Ineffective family coping
- Infective individual coping
- Pain
- Sexual dysfunction

Complications

- Fluid and electrolyte imbalance
- Leg oedema
- Malnutrition
- Ascites
- Pleural effusion

Activity

1. Mention five risk factor of ovarian carcinoma
2. Mention the four types ovarian carcinoma
3. Identify the organs which affected in ovarian carcinoma stage 1

3.18 Cervical Screening Services

Cervical cancer screening services are performed in order to aid in the early diagnosis and treatment of cervical cancer. With the current increase in the statics of cervical cancer mobidity and mortality, it very imperative that these services are rolled out everywhere to increase the access of the services

In this topic, the focus shall be on the two cervical cancer screening services namely; Pap smear and Visual inspection with acetic acid (VIA).

Pap smear

A Pap smear also called a Pap test is a procedure for testing cervical cancer in women.

Detecting cervical cancer early with a Pap smear gives you a greater chance at a cure. A Pap smear can also detect changes in your cervical cells that suggest cancer may develop in the future. Detecting these abnormal cells early with a Pap smear is your first step in halting the possible development of cervical cancer.

Group of women at risk of having an abnormal smear

A number of risk factors have been identified for the development of cervical cancer and precancerous changes in the cervix.

- HPV: The women that are infected with the genital wart virus, also called the human papillomavirus (HPV), although most women with HPV infection do not get cervical cancer.
- Smoking: One common risk factor for premalignant and malignant changes in the cervix is smoking.
- Weakened immune system: Women whose immune systems are weakened or have become weakened by medications for example those on cytotoxic drugs and organ transplant.
- Medications: Women whose mothers took the drug diethylstilbestrol (DES) during pregnancy also are at increased risk.
- Other risk factors: Other risk factors for precancerous changes in the cervix and an abnormal Pap testing include having multiple sexual partners and becoming sexually active at a young age.

How Pap smear is performed

Instructions

The nurse gives instructions as follows

- Tell the woman should have a Pap smear when she is not menstruating. The best time for screening is between 10 and 20 days after the first day of her menstrual period.
- Two days before testing, a woman should avoid douching or using spermicidal foams, creams, or jellies or vaginal medicines (except as directed by a physician).

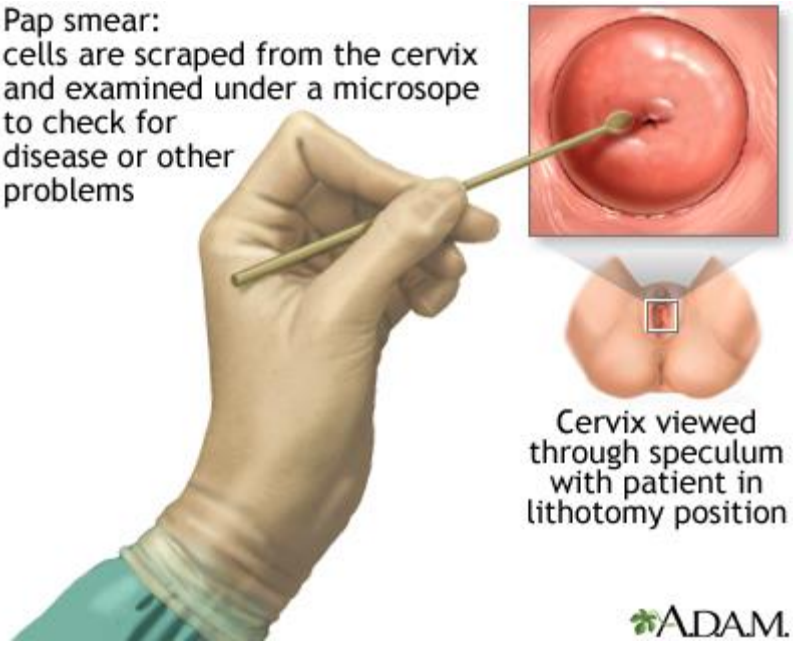


Figure 20: Diagram showing how cervical pap smear is performed

Eligibility criteria

The women that are eligible to go for cervical cancer screening, it all women termed as being at risk as shown above.

Screening should start at age 21. After the first test:

- You should have a Pap smear ever 2 years to check for cervical cancer.
- If you are over age 30 or your Pap smears have been negative for 3 times in a row, your doctor may tell you that you only need a Pap smear every 3 years.
- If you or your sexual partner has other new partners, then you should have a Pap smear every 2 years.

After age 65-70:

- Most women can stop having Pap smears as long as they have had three negative tests within the past 10 years.

Visual Inspection with acetic acid (VIA)

DESCRIPTION OF VIA

Visual inspection with acetic acid (VIA) can be done with the naked eye (also called cervicoscopy or direct visual inspection [DVI]), or with low magnification (also called gynoscopy, aided VI, or VIAM).
What is involved during VIA

- Performing a vaginal speculum exam during which a health care provider applies dilute (3-5%) acetic acid (vinegar) to the cervix.
- Abnormal tissue temporarily appears white when exposed to vinegar.
- Viewing the cervix with the naked eye to identify colour changes on the cervix.
- Determining whether the test result is positive or negative for possible precancerous lesions or cancer.

Figure 21: A positive result

Figure 22: A negative result

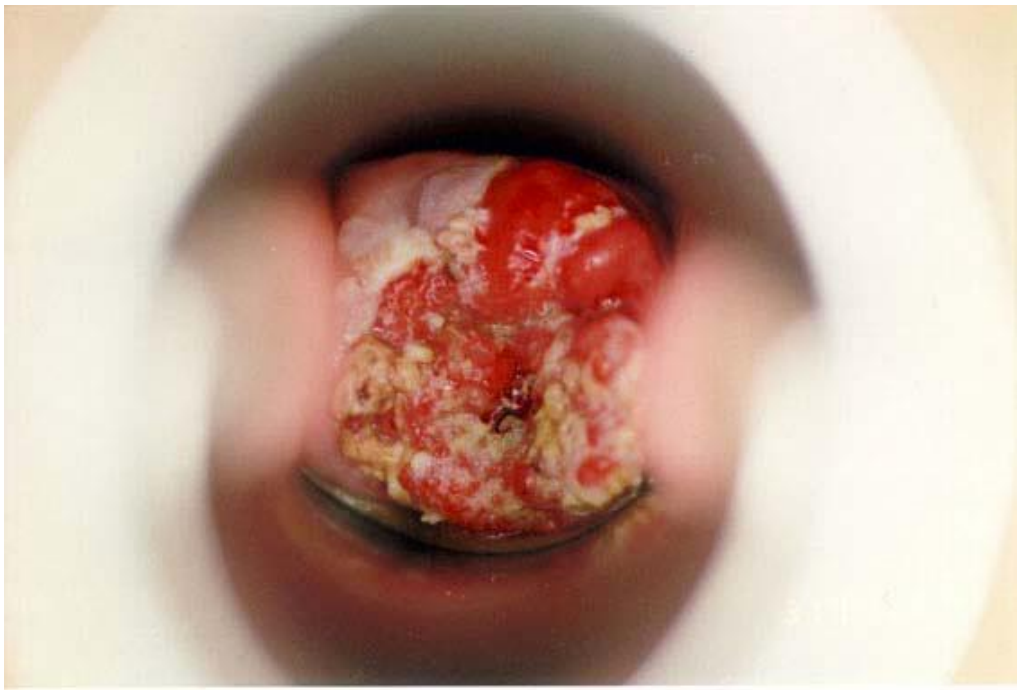


Figure 23: Suspicious of cervical cancer

A VIA test is as effective as the Pap Smear

Indication for this procedure is as those for Pap smear.

The role of the nurse

- To sensitize the communities about the availability of the above services
- Give instructions to clients during the procedure.

19 Summary

Under this unit we defined some terminologies, such as Menarch. We said menarch is a girl's first menstrual cycle that usually happens after several years of pubic hair growth, breast development, and rapid growth known as a "growth spurt. We also defined Adolescence and we said it is a dynamic period of growth and development that bridges childhood to adulthood, while being distinctly different from both groups. Menopause was also defined among other terms. Among other areas looked at was cervical cancer screening. Cervical cancer screening services are performed in order to aid in the early diagnosis and treatment of cervical cancer. With the current increase in the statics of cervical cancer mobidity and mortality, it very imperative that these services are rolled out everywhere to increase the access of the services.

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UNIT 4: FAMILY PLANNING

4.1 Introduction

This lesson will focus on Family planning. Family planning is a voluntary decision made by an individual or a couple on the appropriate number of children they wish to have, and when to have the children (MoH, 2002). This implies that men and women have the right to be informed and to have access to safe, effective, affordable, and acceptable methods of their choice for fertility regulation, which are not against the law, as well as the right of access to health care for safe pregnancy and childbirth.

Therefore In this lesson we are going to discuss the general overview, history and trends of family planning in Zambia and strategies of how Family planning services are being provided. In addition we are going to discuss service delivery requirements and various methods of family planning. So pay attention as we look at this broad topic of Family planning.

4.2 Objectives

At the end of this unit, you should be able to;

1. Give a brief overview of Family planning.
2. Define family planning.
3. Outline the history and trends of family planning in Zambia.
4. Explain the strategies of how family planning services are being provided,
5. State the service delivery requirements for family planning.
6. Discuss the various methods of family planning.

4.3 Family Planning Overview

Family planning is a personal decision made by an individual or a couple on the appropriate number of children they wish to have, and when to have the children. This implies that men and women have the right to be educated on Family planning services and to have access to safe, effective, affordable, and acceptable methods of their choice which are not against the law, as well as the right of access to health care for safe motherhood (MoH, 2002).

In Zambia, the Total Fertility Rate is at 6.2 births per woman implying that a Zambian Woman will give Birth to 6.2 children by the end of her Child bearing age. Currently, the population growth rate ranges from 0.8%-3.4% (ZDHS 2007).

The overall goal of Family planning services is to improve the standards of living and the quality of life of all Zambians through retarding the nation's high growth rate, promoting people's health and welfare, and preventing premature morbidity and mortality, especially among risk groups such as women and children. Another goal of family planning is ensuring that all couples and individuals have the basic right to decide freely and responsibly the number and spacing of their children and to have the information, education and the means to do so (MoH, 2006).

Definition of Family Planning

This is a decision made by the couple on when they want to have their next child and how they will protect themselves from unplanned pregnancy (MoH, 2004).

History and Trends of Family Planning in Zambia

Family Planning in Zambia was started as early as in the 1960s. Unfortunately contraceptive prevalence is still low. According to the findings of the 1996 DHS, 98% of married women in Zambia have heard of family planning, and 59% have used a family planning method despite this knowledge, only 26% of married women in Zambia are currently using a contraceptive method. 14% of married women are using modem methods while 12 % are using traditional methods. There

is a higher age of use of family planning methods among urban women than rural women. In addition, contraceptive use tends to increase with increasing level of education. Better educated women are more likely to use modern methods than women with less education (Reproductive health policy, 2000).Organisation of family planning in Zambia began with the creation of Family Planning and Welfare Association of Zambia (PPWAZ) in March, 1972. Before that, the Government did not view family planning as necessary because Zambia was seen to be sparsely populated. In addition, Family planning was viewed by some people as **genocide** meant to keep down the population of the black race. The country was viewed as a rich country with huge profits from the Mining Industry and the Government was able to create jobs, offer free education, medical and other services. Because of this, the Government had not formulated any family planning policy. Couples were encouraged to have many children. It was also a taboo to discuss family planning with adolescents and unmarried people. Later the scenario changed when the prices of copper dropped and the economy started going down (MoH, 2006).

In 1979, the Family Planning and Welfare Parenthood Association of Zambia (PPWAZ) was changed to Planned Parenthood Association of Zambia (PPAZ). At this time the activities were conducted on a small scale and were mainly along the line of rail on a fee-paying basis and were mostly for couples. A woman was only allowed to access Family planning methods when she produced a letter of consent from the husband. However, the need for family planning increased after 1980 census, as a result of increase in population. The nation started to experience the effects of rapid population growth on economy and individual welfare. The Government then realised the need to look at the factors that could reduce the high levels of reproduction and population growth.

Therefore, in 1980, the family life movement of Zambia was formed to provide alternative family planning methods to those being promoted by PPAZ, that is, natural family planning. With growing concern and interest in population issues, several seminars and workshops were held. At these seminars, the following recommendations were made:

- Establishment of a national population policy.
- Creation of institutions to co-ordinate the population activities.
- Incorporation of family planning into the curricula for medical personnel.
- Legislation allowing nursing staff to provide contraceptives.

In 1984, the department of planning and development was given the mandate to pilot a draft population policy, which aimed at achieving a population growth rate consistent with the economic growth rate. In 1989, the national population policy was formally launched which targeted at reducing the population growth, making family planning services available, accessible and affordable to all eligible users. Since then, the Government has supported population and family planning activities. More nursing staffs have been trained to provide family planning services. In addition, may population and family planning organisations have emerged which have enhanced the implementation of population and family planning programmes (MoH, 2002).

4.4 Strategies for Family Planning

Family planning plays a major role in reducing maternal and new born morbidity and Mortality. Consequently, it contributes towards achievement of the Millennium Development Goals to which Zambia is a signatory. Consequently, Zambia is using the following strategies to ensure a wide utilisation of these services;

1. **Integrating family planning services with other Reproductive Health programmes**

   STI/HIV Prevention and Control programme, MCH/Safe Motherhood, Adolescent and Reproductive Health, Male involvement, Prevention and Management of Abortion and Breastfeeding.

2. **Expanded access to Family planning through non –public Delivery Systems**

   This is done by use of the private sector and social marketing; community based programmes, and Information Education and Communication

3. **Targeting Family Planning services to priority groups**.

   Priority groups include HIV positive mothers, men adolescents among others.

4.5 Service Delivery Requirements for Family Planning

Counselling in Family Planning

Counselling is a vital part of family planning which helps the client to arrive at an informed decision of reproductive options and to use the chosen method safely and effectively. Adequate counselling focuses on the individual client's needs and situation where the provider assesses the needs of each client by asking profiling questions because every client is different and has different needs. In order to provide individualized counselling, you need to profile the client so that the information you provide is relevant to that client, then select the appropriate methods.

Profiling: This is a way of grouping clients according to their reproductive needs during a counselling session, in order to meet each individual client's specific needs. Profiling also helps care providers to integrate information on other reproductive health issues such as breastfeeding, STIs, and especially HIV/AIDS, as the needs are identified.

Profiling questions

Establish if the client is in a single-partner relationship or faithful relationship with one who is faithful. Ask also if the client is currently breast feeding a child who is less than 6 months and if the client and her/his partner wish to have more children.

According to the Central Board of Health (2002), there are 4 categories of clients in family planning profiling;

a. **Spacers or delayers;** are clients who want to wait before having a first or another child. Recommended FP methods include condoms (female and male), spermicides, oral contraceptives, injectables, Norplant, Scientific Natural Family Planning (NSFP), and internal/Intra Uterine Contraceptive Device (IUCD).
b. **Limiters**; clients who do not wish to have any more children. Recommended FP methods include injectables, Norplant, vasectomy and tubal ligation.
c. **Breast feeders**; clients with a baby less than 6 months postpartum. Recommended FP methods include condoms (female and male), spermicides, mini pill, injectables, Norplant, Scientific Natural Family Planning (NSFP), Lactational Amenorrhoea Method (LAM) internal/Intra Uterine Contraceptive Device (IUCD).
d. **Multiple partners**; clients with several sexual partners or who suspect that their partners have several partners. Recommended FP methods include male and female condoms, abstinence.

Following client profiling, you as a care provider should also consider principles of counselling in FP as follows;

a. Understand and respect client's rights, earn their trust and encourage them to ask questions.
b. Understand benefits and limitations of all available methods; present complete and accurate information in an unbiased client sensitive manner.
c. Understand cultural and emotional factors that may affect service provision or utilization by the woman or couple.
d. Do not be judgemental and listen to client concerns actively.
e. Understand the effects of non-verbal communication.
f. Recognize your own insufficiency to effectively provide the service and refer.

Remember also that clients have the right to refuse to practice FP, they have right to choose the method they find suitable, they have right to privacy and confidentiality and right to refuse any type of examination.

Therefore, the acronym GATHER is used as a guide in client counselling for FP services; the letters stand for **G**reet, **A**sk, **T**ell, **H**elp, **E**xplain and **R**eturn (MoH, 2002).

Greet; greet client and introduce yourself, assure them of confidentiality, give full attention and data about available methods, collect full data from client.

Ask; ask client about themselves – particulars needs, obstetric and medical history, Sexually Transmitted Infections (STIs), use of FP before, assess client's knowledge about FP. Discuss concerns and dispel myths and misconceptions of client regarding FP.

Tell; tell client about modern FP methods available, and discuss each in detail.

Help; help client choose a method and repeat information regarding the chosen method if necessary. Explain laboratory tests or procedures that may need to be done. Assess client suitability for the chosen method and help client choose a different method if found not suitable for the chosen method.

Explain; explain how to use the method – what, where, when and how. Explain potential side effects, ask client to repeat instructions, explain when to return for follow-up, resupply.

Return; plan follow-up visit. During the follow-up visit find out if client is still using the method, any side effects experienced, challenges, and help resolve them. If she stopped, find out why, and try to restart or chose another method.

During the counselling session, you can also use the acronym, **CLEAR** that stands for **C**lear and simple language, **L**isten to what the client is saying, **E**ncourage and assure client of effective use of the method, **A**sk for feedback from client and have the client **R**epeat the key points.

Quality of Care in Family Planning

Quality of care is essential for maintaining the health and satisfaction of clients. It is also important for increasing the demand for FP and reducing fertility rates. High quality care includes the following;

1. **Providing and ensuring a wide range of methods, including referral systems.**

   All women, men and young people should be provided with the FP methods they request, as long as they meet the eligibility criteria, without the interference of personal opinions or preconceived biases of the service providers.

2. **Developing a client-provider relationship that is acceptable to the client.**

   Providers have to communicate with clients effectively and in cultural appropriate and sensitive ways. All clients are treated with respect and dignity, in a way that does not infringe upon the client's rights. Personal biases are also avoided.

3. **Effective counselling and provision of complete as well as accurate information about all the methods.**

   The care provider develops an open, interactive communication with the clients, listening attentively and addressing clients' needs. Counselling on variety of methods available is done, and for methods that are not available the client is referred to appropriate centres where they can be accessed. Profiling has to be considered during the counselling session, with the GATHER approach being implemented.

4. **Providing ultimate privacy as well as confidentiality.**

   The client has to be informed in advance if physical exam will be performed, and the client has to be comfortable with it. If possible separate rooms are provided, or screens alternatively. The client should only undress when necessary; the client should not be left undressed for a long time. People without a role in the room during FP counselling and examination should not be present.

5. **Ensuring that care providers have the necessary technical and counselling skills in order to provide the methods safely.**

   Service providers and community players will be trained and given capacity on FP updates. Training for each group will be based on an assessment of current knowledge and functional job description. Regular Technical Support and Supervision will be provided from time to time. Updated protocols will also be provided.

6. **Providing convenient and accessible services that meet the needs of the client.**

   All FP services should have an accessible geographic location, should be convenient to specific needs of male, female and young adults, and should have good ventilation, with clean and safe water with appropriate fire safety measures.

7. **Providing follow-up care to ensure continuity of services.**

All clients should be advised on appropriate follow-up visits, encouraged to report any health concerns following the established referral system. FP services are part of the RH continuum of care together with STI/HIV care, Nutrition, EmONC and Perinatal care.

Logistics of Family Planning

The logistical system in FP provision will include accurate projections of supply needs, appropriate ordering based on minimum levels and Average Periodic Consumptions, procurement and storage of supplies, distribution systems, infection prevention, accurate and consistent record keeping, as well as regular Monitoring and Evaluation to ensure quality of product being consumed by the client.

Infection Prevention (IP)

This aspect is very cardinal in provision of FP services. The basic IP processes that will be used to prevent disease transmission from one source to another include Decontamination with 0.5% Chlorine solution for 10 minutes, cleaning with soapy water, sterilisation and careful storage of instruments.

Record Keeping

Records will be kept up to date and used for planning, monitoring and evaluation of FP programmes. The primary purpose is to ensure quality of care in PF services. Records include;

- Clinical records on FP such as basic information on client's personal particulars. And this information should be kept at the clinic.
- A daily activity register of the number of visits by the client, type and quantity of FP methods supplied, referrals, and many more.
- Stock control cards.
- Monthly and quarterly reports, which should also be submitted to the DHMT.
- Client's FP card with personal particulars, method chosen and dispensed, to be kept by the client and
- The client referral card if appropriate.

Monitoring and Evaluation

This entails setting up a system for monitoring and evaluation of FP services and offering Technical Support and Supervision. It also entails developing an appropriate national mechanism to facilitate decision – making about type and quality of contraceptive services and supplies being provided. This is done through collecting qualitative and quantitative data on the basis of standard forms and questionnaires. An up-to-date record peeking system is also encouraged for all the service providers at all levels.

4.6 Family Planning Methods

His section explains each FP method currently available in Zambia, including low-dose combined oral contraceptives, injectables, barrier methods, long-acting contraceptives and permanent methods of FP. Others are Natural FP methods and Emergency contraception. For each FP method, there is an introduction, information on the mode of action and efficacy, pros and cons, side effects and how to manage them. So pay extra attention as we proceed with this content.

Oral Contraceptives (The Pill) – POPs, COCs

POPs or COCs are Synthetic hormones (progesterone and/or oestrogen) like those produced by the body to regulate the menstrual cycle. Pregnancy is prevented because the pill stops ovulation by inhibiting the production of follicle stimulating and luteinising hormones which are responsible for development and maturation of the ovum .They also change the uterine lining (endometrium) and thicken the cervical mucus thereby inhibiting the sperm from penetrating. It is a reversible method of birth control which should be given only by prescription.

Effectiveness; 100% if manufactured to acceptable standards, stored, distributed and used correctly through consistent taking of the pill daily at the same time.

Advantages of the Pill

- Does not interfere with sex.
- Quick return of fertility
- Regulates the menstrual cycle as both oestrogen and progesterone that regulate the menstrual cycle are present in circulation.
- Reduces menstrual flow and cramping as it balances the hormones for normal menstruation to occur
- Reduces the risk of ovarian cysts, endometriosis, ovarian and endometrial cancer as oestrogens usually promote development of cancer.

Disadvantages of the Pill

- Must be taken every day at the same time each day as to maintain of serum hormonal levels
- Lactation is suppressed as the combined effect of oestrogen and progesterone inhibit effectiveness of prolactin, a milk producing hormone.
- May have lowered effectiveness if used with other drugs like rifampicin and griseofulvin or some epileptic drugs such as phenytoin and carbamazepine hence need additional methods of birth control.
- Increased risk of heart attack, stroke, or blood clots (in lungs, legs, or arms), especially if you smoke more than 10 cigarettes a day, or are over 35 and smoke as these hormones interfere with normal functioning of the clotting factors hence increase the risk of clot formation.
- Possible mood swings or depression.
- May decrease sexual desire as the natural mechanisms that bring about Libido are disturbed with the artificial hormones circulating.
- Does not prevent sexually transmitted infections, HIV/AIDS or Hepatitis B.

Injectables

These are Injectables hormonal methods containing synthetic progesterone which inhibits ovulation, and/or thickens the cervical mucus to prevent sperm from passing through, Change the rate of ovum transport by reducing the cilia or peristaltic movement of the smooth muscles of the fallopian tubes and makes the endometrium unsuitable for implantation. It is a reversible method of birth control given only by prescription. Examples of these methods of contraceptives include Depo-Provera (DMPA) given every three months and Noristarat (NET-EN) given at two months interval.

Effectiveness: > 99%

Advantages of Progestagen Injectables

- Does not interfere with sex.
- Can be used during Lactation after six weeks post-partum as it does not inhibit effectiveness of prolactin hormone.
- Ensures periodic contact of client with the health provider.
- May stop menses or make them very light due to hormonal imbalances.
- Excellent alternative for women 35 and older.
- Reduces the risk of ovarian and endometrial cancer, and may cause recession of benign breast lamps and ovarian cysts as oestrogens usually promote development of cancer.

Disadvantages of Progestagen Injectables

- Irregular or unpredictable bleeding or spotting due to hormonal imbalances.
- Possible weight gain or loss due to variations in appetite.
- It may delay chances of getting pregnant after the doses are stopped. It can take between six and eighteen months for menstruation and ovulation to return to normal.
- Does not protect against sexually transmitted diseases or HIV/AIDS.
- Client must go to the family planning clinic every time for the injection.

Mechanical/Barrier Methods

I.Intrauterine Contraceptive Device (IUCD)

Mode of action

An IUCD is a small plastic device which is placed in the uterus by a trained family planning clinician. It prevents fertilisation by impeding sperm transport, interference with implantation and even by damaging the sperm. With an IUCD in situ, all the various types of defence cells resulting from a foreign body reaction are present in the uterine cavity and spread to the tubes. The foreign body reaction is potentiated by copper.

- Effectiveness: 98% - 99%
- Other forms of IUCD contain synthetic progesterone hence making it both a mechanical as well as a hormonal method depending on the type.
- It is a reversible method of birth control that is given only by prescription.

Advantages of IUCD

- Effective immediately
- Easily inserted and removed in a clinic.
- Has no systemic side effects
- Depending on the type they can be left in place up to 10 years.
- Reduces the risk of tubal pregnancy.

- Does not interfere with lactation as it has no effect on prolactin.
- Return to fertility is immediate if no infection has occurred.

Disadvantages of IUCD

- Must be inserted and removed in a clinic.
- May be some cramping or pain at the time of insertion.
- May experience increased bleeding or cramping during periods.
- May experience spotting between periods.
- Should not be used by women with multiple sex partners because this increases exposure to STI's, which significantly increases the risk of pelvic inflammatory disease (PID).

ii. Condom (Male)

The male condom is a thin usually latex sheath that a man wears over his penis during sexual intercourse. It is an over the counter barrier method of birth control and STIs prevention. Effectiveness: 86 - 97%.

Advantages of the male condom:

a. Easy to get and relatively inexpensive.
b. Can be discontinued at any time.
c. Provides some protection from STI/HIV, Cervical cancer.
d. Reliable method for people who cannot use hormonal birth control methods.
e. It provides dual protection for on a client who is just commenced on COCs.
f. Responsibility of both partners.
g. Can be purchased without a prescription.
h. Does not interfere with breast-feeding.
i. Does not interfere with fertility.
j. May be used immediately after birth or after abortion, the period when infection occurs easily.

Disadvantages of the male condom

a. Requires a man's cooperation for a woman to protect herself from pregnancy and disease.
b. Some irritation or sensitivity to latex.
c. Difficulty using condoms correctly.
d. Must use a new condom with every sex act.
e. Some men say it reduces sexual feelings.
f. Must be rolled onto an erect penis before sexual intercourse, can interrupt foreplay.

g. Spillage or leaking of sperm is possible if condom is put on or removed incorrectly.

iii. Female Condom

A female condom is a strong odourless, transparent sheath that transmits heat and lines the vagina to create barrier against sperm and STIs. It is polyurethane (plastic) sheath with an inner ring that fits inside the vagina, around the cervix (like the diaphragm) and an outer ring that covers the external genitalia. After the man ejaculates, client must twist the end closed and gently pull from the vagina.

Effectiveness: 79% - 95%

Advantages of the female condoms

a. Can be inserted into the vagina up to eight hours before sexual intercourse.
b. Can be used with Spermicides to increase STIs protection.
c. Over the counter barrier method of birth control and can be purchased without a prescription.
d. Provides protection against some STIs.
e. Can be used by people allergic to latex or spermicides or by those who can't take hormones.
f. Made from polyurethane plastic, which conducts body heat.
g. Erection unnecessary to keep female condom in place.
h. Some women and men have an increased sensitivity or "natural" feel compared to male condoms.
i. Does not interfere with breast-feeding.

Disadvantages of the female condoms

a. Difficult to insert or keeping in place.
b. Cannot be combined with male condoms as they pull each other off.
c. May be noisy if not correctly put on.
d. May irritate vagina or penis.
e. More expensive than male latex condoms.
f. Must be used every time one has sex.
g. After the man ejaculates, the open end must be twisted and gently pull from the vagina.

The other rarely used barrier methods include the following;

iv. Diaphragm

A Diaphragm is a barrier method of birth control that uses a dome shaped rubber cup with flexible rim that covers the cervix and is inserted into the vagina before intercourse. It is used in combination with spermicidal jelly or cream.

v. Cervical Cap

Cervical cap is a barrier contraceptive method. It is a soft rubber cup like device that fits snugly around the base of the cervix. It can be used with Spermicides for prolonged and additional pregnancy prevention.

Long Acting Contraceptives

Implants

These are flexible plastics containing synthetic hormones inserted under the skin of client's upper arm which slowly release hormones into the bloodstream over a 5-year period. These hormones stop the ovaries from releasing an egg each month. Hormones also thicken mucus in the cervix preventing the sperm from penetrating it. It is a reversible method of birth control. Examples include Norplant and Jadelle which has 5 and 2 flexible tubes respectively. Effectiveness: > 99%

Advantages of Implants

a. Long term protection up to 5 years.

b. Are highly effective in preventing pregnancy even in obese women.

c. Are effective immediately after insertion.

d. Protects against anaemia by decreasing the amount of menstrual flow.

e. Can be removed anytime, and the woman can become pregnant right away.

f. Does not interfere with sex.

g. Reduces risk of ovarian or endometrial cancer as oestrogens usually promote development of cancer.

Disadvantages of Implants

a. Causes menstrual Changes and irregularities due to hormonal imbalances with higher doses of serum progesterone circulating in the body.

b. Does not offer protection against STI/HIV

c. Insertion or removal requires a trained health provider in a health facility.

d. It is expensive

e. It requires minor surgery for insertion and removal of the capsules which is done under aseptic techniques.

f. Effectiveness is lowered by most anticonvulsant medications.

g. May cause discomfort during insertion and removal

Progestagen- releasing rings

These are comfortable, flexible contraceptive ring that is about two inches in diameter and contains synthetic low dose hormone (levanorgesterel), hormone is similar to those produced by a women's body. The ring is inserted directly into the upper vagina by the client and remains in situ for three months during which time hormone is released slowly from the ring and are directly absorbed through the walls of the vagina then distributed into the bloodstream. Pregnancy is prevented because the ring prevents the ovulation. The ring is a reversible method of birth control available only by prescription.

Effectiveness: 99%. Less than 1 per 100 women may become pregnant with proper use.

Advantages of Progestagen- releasing rings

a. Does not interfere with sex. Ability to remove the ring at leisure.

b. No need to remember to put it on daily/weekly. Month long protection (3 weeks in, 1 week out)

c. Exact positioning of the Nuva Ring is not critical; however the ring should be placed high in the vault of the vagina.

d. Muscles within the vagina allow the ring to stay in place during sex and/or exercise.

e. Reduces menstrual flow and cramping.

f. Reduces the risk of ovarian and endometrial cancer.

g. Ability to become pregnant immediately after discontinued use, if seeking pregnancy.

Disadvantages of Progestagen- releasing rings

a. Not a good choice if patient is uncomfortable with touching herself.

b. Increased risk of heart attack, stroke, or blood clots (in lungs, legs, or arms), especially if client smokes more than 15 cigarettes a day, or are over 35 and smoke.

c. Patient may experience vagina discomfort and discharge.

d. If the ring is kept out of the vagina longer than 3 hours on any day during the 21 day period (3weeks) pregnancy can occur; therefore a back-up method (condoms) is recommended for 7 days.

e. Does not prevent sexually transmitted infections, HIV/AIDS and Hepatitis B.

Permanent Surgical Methods

I. **Female Sterilization/Bilateral Tubaligation** (Btl)

Female sterilization is a surgical intervention that mechanically blocks the fallopian tube to prevent the sperm and egg from uniting (fertilization).

Effectiveness: > 99%

Advantages of BTL

a. Very reliable and effective method of contraception.

b. Permanent method.

c. No long term side effects.

d. Does not interrupt sexual intercourse.

e. Does not interfere with breast-feeding.

Disadvantages of BTL

a. Permanent method hence unsuitable for the young who may still want children.

b. Difficult and expensive to reverse surgical procedure.

c. Requires skilled surgeon to perform the procedure.

d. Possible ectopic (tubal) pregnancy if method fails.

e. No protection against sexually transmitted infections and HIV/AIDS.

ii. Vasectomy (Male Sterilization)

Vasectomy is a surgical procedure is a procedure where one or two cuts are made in the scrotum and then the vas deferens are cut or blocked so that no sperm are contained in the ejaculate and the ovum cannot be fertilised.

Effectiveness: is not immediate as it requires one to have about 20 or more ejaculations to clear off all the sperms from the ejaculate otherwise it is 99% or more effective. Additional methods may be used as a temporal measure.

Advantages of Vasectomy

a. Permanent highly effective method of contraceptive.
b. Very safe surgical procedure.
c. Removes the responsibility of contraception from the woman.
d. No significant long term side effects.
e. Does not interrupt sexual relations.
f. Highly acceptable method.

Disadvantages of Vasectomy

a. Protection for the male only (females are at risk for pregnancy).
b. Usually irreversible.
c. Not immediately effective.
d. Procedure requires skilled medical personnel.
e. Lack of protection from sexually transmitted infections, including HIV.
f. The procedure may be expensive.

Natural methods of contraception

Natural methods of contraception are considered natural because they are not mechanical and not a result of hormone manipulation. Instead, these methods require that a man and woman not have sexual intercourse during the time when an egg is available to be fertilized by a sperm.

The fertility awareness methods (FAMs) are based upon knowing when a woman ovulates each month. In order to use a FAM, it is necessary to watch for the signs and symptoms that indicate ovulation has occurred or is about to occur.

On the average, the egg is released about 14 (plus or minus 2) days before a woman's next menstrual period. FAMS can be up to 98% effective, but they require a continuous and conscious commitment with considerable monitoring and self-control.

Calendar rhythm method

The calendar rhythm method to avoid pregnancy relies upon calculating a woman's fertile period on the calendar. Based upon her 12 previous menstrual cycles, a woman subtracts l8 days from her shortest menstrual cycle to determine her first fertile day, and 11 days from her longest menstrual cycle to determine her last fertile day. She can then calculate the total

number of days during which she may ovulate. If a woman's menstrual cycles are quite irregular from month to month, there will be a greater number of days during which she might become pregnant.

Effectiveness is 80% in preventing pregnancy and when used alone is considered out dated and ineffective.

Basal Body Temperature (BBT)

The Basal Body Temperature (BBT) method is based upon the fact that a woman's temperature drops 12 to 24 hours before an egg is released from her ovary and then increases again once the egg has been released. Unfortunately, this temperature difference is not very large. It is about a half of a degree Celsius in the body at rest.

The BBT method requires that a woman take her temperature every morning before she gets out of bed and records on a chart. To use the basal body temperature as a birth control method, a woman should refrain from having sexual intercourse from the time her temperature drops until at least 48 to 72 hours after her temperature increases again.

Mucus inspection method

The mucus inspection method depends on the presence or absence of a particular type of cervical mucus that a woman produces in response to oestrogen. A woman will generate larger amounts of more watery mucus than usual (like raw egg white) just before release of an egg from her ovary. This so-called egg-white cervical mucus stretches for up to an inch when pulled apart. A woman can learn to recognize differences in the quantity and quality of her cervical mucus by examining its appearance on her underwear, pads, and toilet tissue; or she may gently remove a sample of mucus from the vaginal opening using two fingers.

She may choose to have intercourse between the time of her last menstrual period and the time of change in the cervical mucus. If the woman does not wish to become pregnant, she should not have sexual intercourse at all for 3 to 4 days after she notices the change in her cervical mucus.

Symptothermal method

The symptothermal method combines certain aspects of the calendar, the basal body temperature, and the mucus inspection methods. Not only are all these factors taken into consideration, but so are other symptoms such as slight cramping and breast tenderness. Some women experience lower abdominal discomfort (in the area of the ovaries) during ovulation.

Withdrawal method

Using the withdrawal method, the man withdraws his penis from a woman's vagina before he ejaculates so that the sperm released from his penis does not enter her vagina. Withdrawal is also called coitus interruptus.

Efficacy is 75-80%.

Advantages of Withdrawal

a. No cost involved.

b. Requires no devices.

c. Involves no chemicals.

d. Available in any situation.

Disadvantages of Withdrawal

a. Chances of getting pregnant with this method are much higher than with any other method.

b. Some men have difficulty telling when they will ejaculate.

c. Some men may not withdraw in sufficient time -needs discipline

d. Interruption of the excitement or plateau phase of the sexual response cycle may decrease pleasurable experience.

e. High risk of contracting sexually transmitted infections.

Lactational Amenorrhoea Method (LAM)

LAM is based upon the idea that a woman cannot become pregnant as long as she is breastfeeding her baby exclusively. It is true that a woman may not ovulate quite as soon after giving birth as she would if she were not breastfeeding. The guidelines for LAM as family planning method include three criteria all of which must be met to ensure adequate protection and these include;

- Amenorrhoea,
- Exclusive breastfeeding and
- Less than 6 months postpartum.

Mode of Action

Hormones released during continuous breastfeeding suppress ovulation. Without the release of an egg, pregnancy is not possible.

Women who are breastfeeding usually start ovulating again between 10-12 weeks after delivery.

It is 98% Effective provided the rules are followed strictly in the first 6 months postpartum.

Abstinence

Abstinence from sexual activity means not having any sexual intercourse at all. No sexual intercourse with a member of the opposite sex means that there is no chance that a man's sperm can fertilize a woman's egg.

A man or a woman can practice abstinence from sexual activity for a specific period of time, or continuously throughout one's lifetime. Abstinence is essentially 100% effective in preventing pregnancy. Another significant benefit of abstinence is that it markedly reduces the likelihood of contracting HIV/STI.

Advantages of Abstinence

a. No risk of unintended pregnancy.

b. No risk of becoming infected with a sexually transmitted disease.

c. Opportunities to express feelings and affection for another in other ways.

Disadvantages of Abstinence:

a. Both partners must agree to honour this choice.

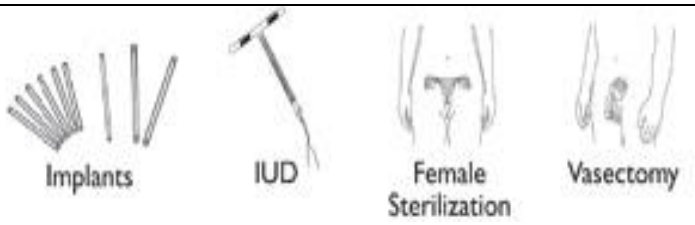
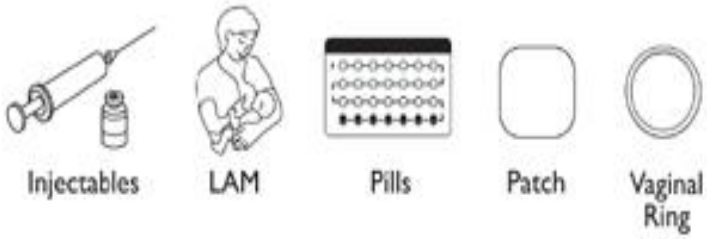
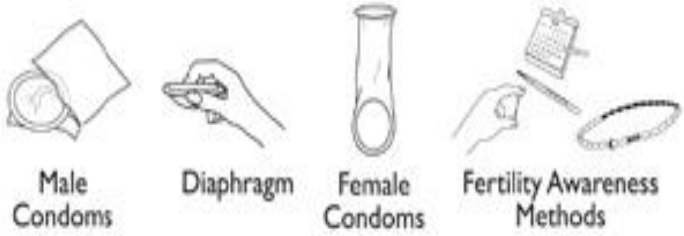
b. Partners must have excellent communication skills; ‘yes’ must mean ‘yes’ and ‘no’ must mean ‘no’.

c. May need ECP if this method fails.

Assessing Effectiveness of Various Methods

Comparing effectiveness of different types of FP methods and tips on how to make them more effective are shown in the table below.

Table 3 : Family Planning Methods

More Effective; <1 pregnancy per 100 women per year	**METHODS**	**HOW TO MAKE THE METHOD MORE EFFECTIVE**
		**Implants, IUD, female sterilization:** After procedure, little or nothing to do or remember **Vasectomy:** Use another method for the first 3 months
		**Injectables:** Get repeat injections on time **Lactational Amenorrhea Method** (for 6 months)**:** Breastfeed often, day and night **Pills:** Take a pill each day **Patch, ring:** Keep in place, change on time
		**Condoms, diaphragm:** Use correctly every time you have sex **Fertility awareness methods:** Abstain or use condoms on fertile days. Newest methods (Standard Days Method and Two Day Method) may be easier to use.

Less effective About 30 pregnancies per 100 women in one year	 Withdrawal  Spermicides	**Withdrawal, Spermicides:** Use correctly every time you have sex

1. **Emergency or Postcoital Contraception (PCC)**

This method is reserved when contraception is not used, used incorrectly or failed.

There are two methods of PCC that are commonly used which are the progesterone only method and the Copper Intra Uterine Device (IUCD).

- **Progesterone Only Method/Emergency Contraceptive Pill** (ECP)

ECP is a hormonal emergency contraceptive method used after sexual intercourse to prevent pregnancy. It comprises of Two Pills each containing Progestagen levanorgesterel, each containing 750micrograms.

Effectiveness: 98%

a. The first pill is taken within 72 hours of unprotected sex and the second taken 12 hours later.

b. ECP only works if a woman is not already pregnant.

c. Prevents or delays ovulation by creating a state of sudden hormonal imbalance.

d. Inhibits fertilization by thickening the cervical mucus to inhibit possible sperm transportation, movement of the released ovum is also delayed, if ovulation has taken place.

Advantages of ECPs

a. Method of contraception used to prevent pregnancy after unprotected sex, after contraception accident; male/female condom slipped, broke, or leaked, after a woman's diaphragm or cervical cap was inserted incorrectly, removed too early, or found to be torn, and even after a woman has missed one or more of oral contraceptives.

b. They are readily available, inexpensive, accessed over the counter in chemists.

c. The effect of nausea is minimised.

Disadvantages of ECPs

a. Does not work if already pregnant.

b. Limited time frame (ECPs must be used within 72 hours or three days after unprotected sex). It is not an on-going method of contraception

c. Ectopic (tubal) pregnancy may be a possible result due to the slowing effects of progesterone on smooth muscles of the fallopian tubes.

d. ECPs change the amount, duration, and timing of the next menstrual period in about 10 to 15% of women treated.

e. There is still a chance of pregnancy. If menstrual cycle does not start in 7 days, contact your family planning clinician to rule out pregnancy.

f. Does not provide protection from sexually transmitted infections and HIV/AIDS.

4.7 Summary

Family planning is defined as a voluntary decision made by an individual or a couple on the appropriate number of children they wish to have, and when to have the children Family planning methods include, oral contraceptives, condoms, injectales, bilateral tubal ligation, vasectomy and others. The decision to choose the method to use rests with the client while we facilitate the process by providing adequate and factual information on all methods. Counselling and client assessment helps the service provider to understand individual client needs. Family planning strategies include expanded access to Family planning through non –public Delivery Systems, Integrating family planning services with other Reproductive Health programmes, among others. If we are to be effective providers of family planning services, we need to master the subject of family planning.

4.8 Self Assessment Test

Instructions: Encircle the correct answer

1. The following are traditional methods of family planning:

(a) Abstinence (b) copper T (c) Ligation (d) vasectomy

2. Give an example of mechanical barrier method from the listed methods

(a) Spermatocide (b) foam (c) Jelly (d) female condom

3. When you miss one pill, the right thing to do is to:

(a)Take two as soon as you remember within six hours and continue

(b)Take one as soon as you remember within 24 hours and continue

(c)Take two as soon as you remember within 24hours and continue

(d)Take one as soon as you remember within six hours and continue

4……. Is a contraindication of Jadelle Insertion?

(a) low blood pressure (b)mild blood pressure (c)acne (d)high blood pressure

5. One of the permanent methods of family planning is:

(b) (a)abstinence (b) withdrawal (c)Vasectomy (d)intrauterine tubal ligation

Answers

1.a

2.a

3.d

4.d

5.c

4.8 References

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UNIT 5: GENDER AND HEALTH

5.1 Introduction

Welcome to a socially motivated topic on Gender and health. In this topic you are going to learn about gender roles, relations and life choices. You will equally have an opportunity to cover the effects of cultural, social and political factors on women's and men's reproductive health. Issues of Gender-Based Violence (GBV) will also be discussed briefly because the detailed description of GBV is covered in Sociology course. We shall also discuss issues of sexual and reproductive health rights as well as gender mainstreaming in the health sector. In conclusion, the declaration on elimination of all forms of discrimination against women will be outlined. So pay attention as we proceed.

5.2 Objectives

By the end of this unit you will be able to:

1. Describe the gender roles, relations and life choices.
2. Discuss the effects of cultural, social, economic and political factors on women's and men's health.
3. Explain gender-based violence
4. Outline the sexual and reproductive health rights.
5. Discuss gender mainstreaming in the health sector.
6. Cite the declaration on elimination of all forms of discrimination against women.

5.3 Gender Roles, Relations and Life Choices

Gender roles are learnt behaviours in a given society and are determined by societal norms. People are born female or male, but learn to be girls or boys who grow into women or men. As they mature; they are taught beliefs, behaviours, attitudes and how they should relate to other people. These roles tend to change over time.

Gender roles for women and men vary greatly from one culture to another, from one social group to another within the same culture and according to race, class, education levels, economic circumstances, age, among other factors. All these influence what is considered appropriate for men and women to do. They may influence healthcare seeking behaviour.

Some examples of gender roles in Zambia are shown in the following table;

Table 4: Gender Roles

Men	Women
Are heads of house holds	Manage the Kitchen
Issue instructions	Obey instructions
Make decisions	Are least consulted in decision-making
Protect families	Are protected

Adapted from Integrated Technical Guidelines for Frontline Health workers (MoH, 2002)

Gender attitudes influence how women and men perceive themselves and others. Examining gender roles and relationships between men and women helps to understand underlying attitudes. This misspe the misconceptions that favour only women in gender advocacy and sidelines the male folk

The following are the points on what gender implies:

1. Both women and men have roles in the spheres of health services delivery and public life, that is, from community to government level.

2. Gender roles are socially constructed and can, therefore, be changed.
3. The root causes of inequalities must be understood and addressed. It is therefore worthy emphasising the establishment of structures or programmes that reduce women's workload and to release them from the culturally-defined limitations that prevent them from participating in developmental activities.
4. Both men and women should be gender advocates.
5. Gender also implies appreciating that men and women are different as a result of their biological and physiological make up, and that these differences often may become synonymous with inequities and discrimination, and so become unjust.

The following are points on what gender does not imply;

1. Focusing on women's positions only As in some instances men may be disadvantaged rather than women.
2. Fighting for equality between men and women.
3. Socially exaggerating the biological differences between men and women.
4. Blaming the opposite sex for inequality.
5. Those only women should be gender advocates but men also need to be involved.

5.4 Effects of Cultural, Social, Economic and Political Factors on Women's and Men's Health

Despite the ethnic diversity in Zambia, the status and position of women has remained low in all cultures. Even in matrilineal societies, it is the uncle or brother who is mandated to make decisions. Girls are socialized to become wives, mothers and care-givers and to be submissive while boys are groomed to take up the roles of leadership and providers in society. This type of socialization process has the effect of creating an image of women as inferior subservant beings and results in women who lack self confidence and take up second place in society. This inferior status tends to rob women of many guarantees to their rights and freedoms (MoG, 2006). Also despite the existence of matrilineal cultural groups, the Zambian society is overwhelmingly patriarchal in nature with customs, culture and religion that are male- dominated. Stereotyping with a distinct division of labour between women and men is a feature of society. A number of traditional practices serve to reinforce the inferior status of women. Examples of such a practice include:

- Initiation ceremonies and pre-marriage counselling, common to all ethnic groups but which vary somewhat in their practice. These teachings emphasise sex roles and encourage stereotyping. The girl or young woman is taught that her primary role in life is that of a wife, someone who cooks, cleans, has babies, cares for others and is submissive. On the other hand men are expected to pay lobola or bride price in many groupings. The payment of lobola has several consequences, one of which renders the woman to be regarded as the man's property.

5.5 Gender-Based Violence

Gender violence includes emotional and physical abuse, mainly against women and it is a public health problem.
Domestic violence is a pattern of behaviour that generally starts with tension and intimidation in the couple's relationship and progresses to physical assault, with injury to the woman and often the children. It is often cyclical, characterised by periods of time when tension builds and then a release of tension through physical violence. Domestic violence is a common cause of mental ill health and often results in serious harm or death to the afflicted. It is the most common type of gender violence seen in health care settings.

Sexual Violence

This is defined as any unwanted or unwelcome behaviour of a sexual nature that is offensive to the subject of the harassment, and causes that person to feel threatened, humiliated, or embarrassed (MoH, 2002). It is one of the types of gender violence.

Risk Factors

Some of the main risk factors for sexual gender violence include:

- Increased use of alcohol or illicit drugs
- Gender inequalities (*for example*, the perceived subordinate position of women)
- Cultural values that promote violence
- Unemployment, poverty and homelessness.

Sexual Abuse

Sexual abuse in Reproductive Health is where a person forces someone of the opposite gender to have sex without their permission by use of threats such as weapons, looks, actions or gestures and smashing things. Sexual abuse is a violation perpetrated by a person who holds, or is perceived to hold power over someone who is vulnerable. The abuse may have physical, verbal and emotional components. Also many children and adolescents are sexually and physically abused by a parent or a close relative. Some of these children and adolescents die because of the abuse. For those who survive, the emotional, mental trauma and damage remains long after the physical signs of abuse have healed (Daka, 2005).

Types of sexual abuse

According to Zambian laws offences of sexual immorality are classified as follows;

Defilement - these are sexual offences practiced against children by someone elderly. Such cases are common with house boys who take advantage of children left under their custody especially when all family members are not at home.

Rape -is forced or unconsented sex done to a boy or a girl of above twelve years of age.

Molestation - to molest is to touch or attack someone in a sexual way against their wishes. For example boys are sexually molested by their fathers, teachers or priests.

Bestiality - is having sex with an animal, some people sleep with dogs or baboons as a way of making money

Sodomy - this is anal sex which has recently been increasing especially among the homosexuals. Young boys too are at risk when left under the care of house boys at home.

Incest - is having sex with a close relative like father, brother, sister, cousin, or any other close relative.

Factors inhibiting voluntary reporting of sexual abuse

Below is a list of factors inhibiting report of sexual abuse cases;

- The nature of family problems related to sexual abuse and neglect.
- The sense of secrecy and shame surrounding maltreatment
- The possible consequences of intervention by the victim support groups, protection authorities or police for example the police may not take this seriously.
- Many of the victims are young and relatively dependent.
- Others may want to disclose their abuse but stopped by friends or relatives for fear of embarrassment to the family.
- Others are often afraid that no one will believe or help them. They may be afraid of what will happen. Abusive parents frequently warn their children not to tell anyone. They may convince the child that the abuse is the girl`s fault and that telling someone will only get them into more trouble (Daka,2005).

Management of sexual abuse victims

Once trauma has occurred early intervention is essential. However, even if the abused has not been reported early, it is still treatable. In either situations support from parents, school, and the adolescent`s pear group is important. There are many clinics, programs, techniques and therapies today to help young person exposed, to deal with issues of sexual abuse. With the right help and the sensitivity and support of the family and professionals, an adolescent with abuse can overcome the trauma and go on to lead a healthy and productive life. However, a case of sexual abuse should be reported to the police / victim support first before seeking medical advice where they are issued with a medical form to be used for legal procedures.

The procedure for the abused victim should be as follows:

- The abused individual should not take a bath before examination by the medical practitioner or else evidence may be distorted.
- HIV test is done if the victim is taken to hospital within the first 72hrs and prophylaxis ARVs given if the offender`s status is not known and when he is reactive.
- If the offender is known, both the offender and abused are tested for HIV, and if offender is positive, the abused is put on PEP and the offender's CD4 count is checked in order to ascertain eligibility to ARVs.
- Both are also tested for other STIs, and if result is positive, they are treated for STIs.
- Sitz baths are advised in case of lacerations to the genitals and good personal hygiene.
- Emergency contraceptive is started
- Psychosocial counselling is done

Organizations involved with sexually abused cases

- _Young Women Christian Association (YWCA)
- Sexual and Gender Based Violence Agency,
- Police department usually known as Victim Support Unit,
- Hospitals
- Mental health centre
- Distress centre
- Other community service organization that provides counseling and support to children and families.

Many of these organizations are listed among the emergency telephone numbers on or near the first page of your local telephone directory.

Effects of sexual abuse on health

Some of the effects of sexual abuse include:

- Injury
- Disability
- Death
- STIs and HIV
- Reproductive Health disorders
- Difficult labour
- Miscarriages
- Unwanted pregnancy
- unsafe abortions
- depression
- Excessive bleeding

Emotional and social effects will include anger, fear, resentment, self hate shame, insecurity, loss of ability to function in family and society sleep and eating disorders mental illness, social isolation and eventually suicide.

Legal/ Protection

Strain on already burdened police and court systems

Law governing various forms of abuse may not be in place; no justice assistance for victims, no consequences for perpetrators

Security/ community environment

Victim feels insecure, threatened, and afraid.

Climate of fear and insecurity- entire community

Report/ Referral System

Police conducts investigations, arrest alleged assailant and file charges with the court.

Complications for sexual abuse

The acute consequences of sexual abuse for both male and female victims include physical injury, sexually transmitted infections (STIs), and psychological trauma. For female victims, there is the added danger of unwanted pregnancy, injury, and the chronic complications of STI-related vaginal discharge, dysmenorrheal and pelvic pain.

Prevention of sexual abuse

People who work with youth must be aware that sexual abuse prevention must be a component of any program promoting adolescent reproductive and sexual health.

- Most abusive parents do not consciously set out to harm their children. Therefore efforts to assist troubled families should be promoted. Parents at risk of abusing children may be reached and helped before they resort to violence.

- Parenting education can help parents to better understand normal child development and to have a more nurturing and enjoyable relationship with their children. Positive approaches to parenting can help parents with children of any age.
- Encourage the local school boards to develop and implement sexual abuse prevention programs in schools to sensitize the school children to be able to report any suspicious acts by anyone.
- If a child tells you about an abusive situation or experience, be supportive. Show the child that you believe her/him and ensure that the occurrence is promptly reported to the appropriate authorities.
- You can assist by teaching the teens how to recognize and say no to abusive or exploitative behaviour. Children should know that they have the right to be free from abuse and exploitation.
- You can help the children and adults, assistance to prevent an abusive or neglectful pattern from developing.

5.4 Sexual and Reproductive Health Rights

In this section you will cover sexual and reproductive health rights.

Sexual Rights

The Platform for Action from the 1995 Beijing Conference on Women established that human rights include the right of women freely and without coercion, violence or discrimination, to have control over and make decisions concerning their own sexuality, including their own sexual and reproductive health. This paragraph has been interpreted by some countries as the applicable definition of women's sexual rights. The UN Commission on Human Rights has established that if women had more power, their ability to protect themselves against violence would be strengthened. At the 14th World Congress of Sexology (Hong Kong, 1999), the WAS adopted the Universal Declaration of Sexual Rights, which includes 11 sexual rights:

- The right to sexual freedom.
- The right to sexual autonomy, sexual integrity, and safety of the sexual body.
- The right to sexual privacy.
- The right to sexual equity.
- The right to sexual pleasure.
- The right to emotional sexual expression.
- The right to sexually associate freely.
- The right to make free and responsible reproductive choices.
- The right to sexual information based upon scientific inquiry.
- The right to comprehensive sexuality education.
- The right to sexual health care.

This Declaration gave an influence on the yogyakarta principles, especially on the idea of each person's integrity, right to issues of sexuality, including sexual and reproductive health.

Case Study

Read the following Case study and answer the questions that follow**:**

Musonda is 15 years old and lives in the city with her 42 year old Uncle, who is married and has four children. She is in grade eleven (11), and relies upon this Uncle for sponsorship at school. Her real parents live in the village and have no financial capacity to see her through her education. Musonda likes School. She is always top of her class whenever their class writes an assessment, and her Teacher likes her a lot. Musonda wants to be a Medical Doctor when she completes her Secondary education.

Every day when Musonda knocks off from school and goes home, she is usually alone with her uncle. Her uncle sexually abuses her, and he has been doing so for two (2) years now. Musonda has not disclosed this to her Aunt or indeed anyone else, for fear of embarrassment or stoppage of sponsorship by her uncle. Now Musoda is very worried about her situation.

Questions

a. What could be some of Musonda's fears with regard to her being sexually abused by the Uncle?
b. What help can you provide to Musonda if you are a Nurse and she has decided to confide in you?

Reproductive rights are Legal rights and freedoms relating to reproduction and Reproductive Health. The World Health Organisation defines reproductive rights as follows:

Reproductive rights rest on the recognition of the basic right of all couples and individuals to decide freely and responsibly the number, spacing and timing of their children and to have the information and means to do so, and the right to attain the highest standard of sexual and reproductive health. They also include the right of all to make decisions concerning reproduction free of discrimination, coercion and violence.

5.5 Mainstreaming Gender in the Health Sector

Gender analysis

Following the implementation of health reforms, whose vision stipulated the provision of health service delivery as close to the family as possible, there have been improvements in access in the health sector. The issues range from health facilities, management of cases or victims of violence and child abuse. The health services in Zambia are arranged in three levels, namely first level comprising health post health centres and the district hospital, second level comprising the provincial hospitals and the tertiary level comprising referral hospitals. The health sector is faced with shortages of trained human resources to provide quality care to the victims of violence. This in turn has reduced access to health services for the victims of violence and delays in the management of such cases. For instance, there is currently fewer doctors per population. To this effect, there has been an increase in the Maternal Mortality Rates (MMR) (MoG, 2006).

As for women who received Ante natal care from a trained provider the Ministry of Health Management Information System (2003-2005) indicates a reduction in antenatal attendance coverage from 97% in 2003 to 93% in 2005. The reduction in coverage could be attributed to the attrition in human resource personnel in the health sector. Indicators in family planning show an increase in new acceptors of family planning methods from 113 per 1,000 women of child bearing age to 127 per 1,000 and 138 per 1,000 of women of child bearing age in 2003, 2004 and 2005 respectively (MoG, 2006).

Gender inequality

According to The Global Gender Gap Report 2013 by World Economic Forum, Gender Inequality refers to unequal treatment or perceptions based on their gender. It arises from differences in socially constructed gender role as well as biologically through chromosomes, brain structure, and hormonal differences. Gender systems are often dichotomous and hierarchical; gender binary systems may reflect the inequalities that manifest in many dentions of daily life. Gender inequality originates from distinctions, whether empirically grounded or socially constructed.

Gender equity

Through the Gender policy, Government made a deliberate resolution to make quality Reproductive and other Health services more accessible to both women and men.

Gender-blind policies

Despite Zambia having a comprehensive institutional framework for gender mainstreaming, there are a number of constraints that are encountered. Some of these include:

- Institutional framework is weak especially the Advisory Body, Gender Consultative Forum and the Parliamentary Committee on Legal Affairs, Human Rights, Governance, and Gender Matters;
- Lack of appreciation and resistance to Gender concepts at various levels;

- Limited gender analytical skills among the major implementing agencies especially among the Gender Focal Points in line ministries and provincial administration;
- Unsystematic monitoring of gender mainstreaming activities especially in line ministries; .
- Unsystematic documentation of gender disaggregated data;
- Limited human and financial resources to implement gender activities and facilitate the re-training of critical stakeholders.

In order to address the above challenges in Gender mainstreaming**,** the Government will continue to strengthen the coordinating, monitoring and evaluation mechanisms for gender mainstreaming and build gender analytical capacity in line ministries, provincial and district administrations (MoG, 2006).

5.6 Advocacy Role of a Nurse in Gender Issues

The nursing role is rapidly evolving because nurses are tasked with an even broader range of health care responsibilities where care provision has become more complicated. today's nurses are not just caring for the sick, but there also publishing scientific research and actively addressing health care policy they do so by collaborating with other despline suc as Social Welfare , Public Safety Personel and other specialist. By working with others, the nurses play the following advocacy roles:

- Advocating against sexual violence among vulnerable groups such as women in the puerperium, minors, mentally challenged among others,
- Advocating for better nutrition among vulnerable groups such as under-five children, pregnant women, adolescents and the aged.
- Advocating to relevant authorities for woman economic and social empowerment, so that a woman ca have a voice in society for decision making.
- Advocating for infrastructure development, such as Roads development, and development of Clinics to facilitate easy referral systems between health facilities.
- Lobbying for national deliberate policies on Girl-Child Education and Youth Empowerment.
- Application of Human rights for various groups like Men, Women, Children, and many more.

Activity
Get your notebook, list down the roles of a nurse in advocating for clients in Reproductive Health. All the best.

Excellent, compare with the information above and make corrections.

5.7 Elimination of all Forms of Discrimination against Women Declaration

To streamline the implementation of the National Gender Policy, Government of the Republic of Zambia adopted the Strategic Plan of Action (SPA) for the National Gender Policy which set out national gender priorities and aspirations that the country intend to achieve in the next five years. Due to the cross-cutting nature of gender, the SPA has been married with existing macro and sectorial policies and programmes. The Strategic Plan of Action for the implementation of the National Gender Policy is a tool which operationalizes the National Gender Policy and is aimed at achieving full and equal participation and benefit of both women and men in the socio-economic spheres.

The development of the Strategic Plan of Action for the National Gender Policy took into account the provisions of the various regional and international instruments on gender which include the Southern Africa Development Community (SADC) Declaration on Gender and Development and its Addendum on the Prevention of Violence Against Women and Children; the Dakar and Beijing Platforms for Action and the Convention on the Elimination of all forms of Discrimination Against Women (CEDAW).
On the issue of gender violence, Government has demonstrated its resolved commitment to reduce and/or eradicate gender based violence by amending the Penal Code which has domesticated in part the provisions of the Convention on the Elimination of all forms of Discrimination Against Women (CEDAW) as they relate to violence against women. Furthermore, Act no. 15 of 2005 has stiffened the penalties for perpetrators of gender violence (MoG, 2006).

Zambian Declaration

"The Government will endeavour to make quality reproductive and other health services more accessible to women and men at all levels by 2015" (MoG, 2006 P 49).

Self Test
Attempt to answer the following questions without looking up the answers first:

1. The following are Universal Sexual Rights, **except**….
c. The right to sexual malpractice.
d. The right to sexual equity.
e. The right to sexual pleasure
f. The right to emotional sexual expression.
2. Write True or False (T/F) against each of the following statements on factors inhibiting report of sexual abuse cases;
a. The nature of family problems related to sexual abuse and neglect.
b. The sense of secrecy and shame surrounding maltreatment

Answers
Q1: A, Q2a: T, Q2b: T

5.8 Summary

We have looked at Gender and Health in which we have referred Gender as to being, the socially constructed roles, activities, and responsibilities assigned to men and women in a given culture, location, or time. It refers to everything women and men do, and everything expected of them, with the exception of sexually distinct functions (such as childbirth).

With the knowledge acquired from this topic, you will be able to manage victims of gender-based violence, as well as not to incline gender advocacy just to one specific gender, but to advocate for both genders of male and female.

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