NCM 109 – CARE OF MOTHER AND CHILD HEALTH
AT RISK OR WITH PROBLEM
MATERNAL – HANDOUTS

HIGH RISK CONDITIONS

RISK FACTOR

- It is an attribute of a person or of a community KNOWN to be associated with a health problem
- It is more of a PROBABILITY than a certainty to cause/lead to a health problem

HIGH RISK PREGNANCY

- A pregnancy with a significant chance that the outcome may be less than ideal for either the mother or fetus or both.
- One in which some maternal or fetal factor either psychosocial or psychological will result in a birth of high-risk infant or harm to the woman herself.

PRENATAL CARE RISK FACTOR CODE (DOH)

- < 15
- <145 cm in height
- Pelvic deformities
- Leg deformities
- No prenatal or irregular PNCU in previous pregnancies
- >42 weeks AOG
- Pre-pregnancy weight less than 80% of IBW
- Anemia <8 gms hemoglobin
- Weight gain < 4% of pre-pregnancy weight per semester
- Weight gain > 6% of pre-pregnancy weight per semester
- Abnormal presentation
- Multiple fetuses
- Hypertension
- Dizziness and blurring of vision
- Convulsion
- Albuminuria
- Vaginal infections
- Vaginal bleeding
- Pitting edema
- Heart or renal problem
- Tuberculosis
- Malaria

- Diabetes
- Rubella
- Thyroid problems
- Smoker/alcoholic drinker
- Mentally incapacitated, socio economic streamlined
- Unwanted pregnancy
- Illiterate mother
- Heavy manual labor
- Unwed mother

HIGH RISK PREGNANCY CLASSIFICATION

- Pre-existing risk
- Risks emerging during pregnancy
- Risks of labor and delivery
- Risks of postpartum

PRE-EXISTING RISK CONDITIONS

- Age
- Parity
- Social factors
- Environmental factors
- Marital status
- Pre-existing disease
- Physical stature
- Nutritional status

RISKS EMERGING IN PREGNANCY

- Anemia
- Hemorrhage
- Pregnancy induced hypertension
- Transverse lie
- Malposition
- Suspected CPD
- Negative attitudes toward pregnancy

RISKS OF LABOR AND DELIVERY

- PROM
- Amnionitis
- Transverse lie
- Prolonged/ obstructed labor
- Intra-partal bleeding from previa/abruptio

RISK EMERGING IN POSTPARTUM

- Puerperal infection
- Hemorrhage
- Sub-involution
- Postoperative complications
- Thrombophlebitis
- Depression

RISK ASSESSMENT

- Obstetrical approach to prevention
- Screen patients
- Identify problems
- Tailor management to promote optimal pregnancy outcome

ASSESSMENT

- Careful screening
- Biographic data
- OB history
- Family History
- Medical History
- Gynecologic
- Social History

PHYSICAL EXAMINATION

- Use inspection and palpation
- Ask the patient to void to prevent discomfort and inaccurate findings during palpation
- Help her disrobe and put on examination gown
- Help into the dorsal lithotomy position
- Drape all areas not being examined
- Inspect the external genitalia – put on gloves

RISK ASSESSMENT TOOLS

- Maternal Child Health Care Index
- Home Based Maternity Record

RISK APPROACH

- Is an action to avoid or modify the risk and to ensure that appropriate care is available, if and when, the problem occurs
- Characteristics of the Risk Approach
    - Maximal utilization of available resources to complement the health care system
    - Managerial tool for the allocation of resources based on local needs and problems
    - Personnel at all levels can institute prompt and organized schedules
    - Community members need to be educated about high risk factors and importance of antenatal care
    - Pregnant women need to have access to antenatal care
    - Staff need to be trained to recognize risk factors
    - Need the motivation to persuade women and family

SURVEILLANCE OF HIGH-RISK PREGNANCY

- Maternal monitoring
- Fetal monitoring

MATERNAL MONITORING

- Medical, obstetrical, nursing history
- Environmental and personal risk factors
- Prenatal physical examination

    - Sudden weight gain
    - Roll over test – 28-32 weeks AOG
  - Urine test for albumin
  - Urinalysis
  - Hemoglobin determination
  - HbSAg

FETAL MONITORING

  - Family history
  - Leopold's maneuver and Fundic height measurement
  - Maternal serum screening for alpha fetoprotein
  - Ultrasound
    - Gestational sac location
    - EFW
    - Crown rump length to establish gestational age in first trimester
    - Femur length in the 2nd and 3rd trimester
    - Intrauterine growth assessment
    - Location and grading of placenta
    - Location of amniotic fluid pool
    - Assessment of biophysical profile
    - Examination of fetal cardiac features
    - Doppler blood flow studies
    - Umbilical velocimetry
    - Congenital anomalies
    - Biophysical profile
      - Non-stress test
      - Muscle tone
      - Fetal movement
      - Fetal breathing
      - Amniotic fluid index
      - Placental grade
  - Fetal echocardiography
  - Fetal electronic monitoring
    - Non-stress test
    - Contraction stress test
  - Amniocentesis
  - Maternal assessment of fetal activity

DIAGNOSTIC EXAMS

  - Ultrasound, CT scan, MRI
  - Lab exam
  - Dilatation and curettage
  - Chorionic villi sampling
  - PAP smear
  - Laparoscopy
  - Cytology
  - Pelvimetry

- Fertility studies
- Cryotheraphy
- Chorionic Villus Sampling
- Amniocentesis
- Reactive NST
- Positive CST

HEMORRHAGIC DISORDERS IN PREGNANCY

☐ alarming to the client and considered medical emergencies
☐ cause may be genetic factors, hormone imbalance, psychological, infection, and some systemic disorders

I. ABORTION

- expulsion of the products of conception before the age of viability (<20 – 24 weeks/< 500 grams/< 20 cms.)

TYPES OF ABORTION:

- Induced
  - Therapeutic
    - Dilatation and curettage
    - Suction curettage
    - Dilatation and extraction
    - Dilatation and evacuation
  - Non-Therapeutic
- Spontaneous – natural causes
  - Threatened
  - Incomplete
  - Complete
  - Missed
  - Inevitable
  - Habitual

CAUSES:

- Unknown
  - Abnormal fetal formation
  - Chromosomal aberration
  - Teratogenic factors
  - Implantation Abnormalities
- Maternal Causes
  - Systemic infections – rubella, syphilis, poliomyelitis, cytomegalovirus, toxoplasmosis
  - Infections – UTI
  - Chronic wasting disease (cardiac failure, chronic nephritis, diabetes)
- Abnormal pathological condition of the reproductive tract
  - Retroverted uterus
  - Developmental defects – bicornuate uterus, myomas
  - Cervical incompetence – due to weakness or trauma

- Teratogenic drugs (Isotretinoin (Accutane) Endocrine imbalance ❑ Psychological factors
- Trauma – accidents
- Severe nutritional deprivation

SPONTANEOUS ABORTION

- Termination of pregnancy spontaneously at any time before the fetus has attained viability

TYPES OF SPONTANEOUS ABORTION

A. COMPLETE ABORTION
   - The fetus and the placenta are expelled complete

B. INCOMPLETE ABORTION
   - Expulsion of fetus is incomplete
   - Membranes or placenta retained
   - Treatment is by evacuation – Curettage

C. THREATENED ABORTION
   - (early – under 16 weeks; late – 16-24 weeks)
   - Assessment Basis:
     - scanty bleeding
     - slight pain or cramping
     - closed cervical OS
   - Management
     ✓ Limit activities for 24 to 48 hours
     ✓ Mild sedative to aid in relaxation
     ✓ Coitus is restricted for 2 weeks

D. INEVITABLE ABORTION
   - Cervix opens begins to dilate
   - Heavier bleeding and stronger contractions
   - Loss of fetus usually not avoidable
   - Bleeding is retroplacental and ovum already dead
   - Treatment is by evacuation of uterus

E. IMMINENT ABORTION
   - Open cervical os
   - Heavier bleeding and stronger contractions
   - Loss of fetus usually not avoidable
   - Ruptured BOW
   - Treatment is by evacuation of uterus

F. HABITUAL ABORTION
   - Occurrence of at least 3 consecutive spontaneous abortion

G. MISSED ABORTION
   - Fetus dies in uterus but is not expelled
   - Fetus dies and is retained inside the utero.

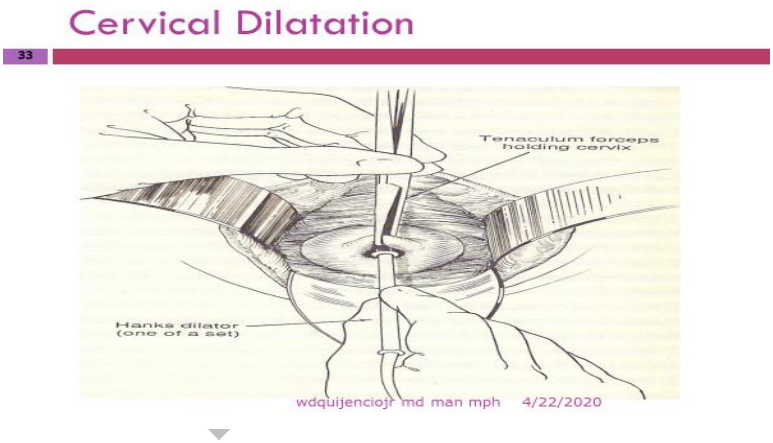
- General Softening o Mummification
- Stony Material
- Abortion occurs 4-6 weeks after fetal death o Blood Mole Carneous Mole
- Management:
  - Dilatation and Curettage
  - If over 14 weeks – labor is induced by Administration of
  - Prostaglandin Suppository Cytotec (Misoprostol) or Oxytocin
- Disseminated Intravascular coagulation occurs

H. SEPTIC ABORTION

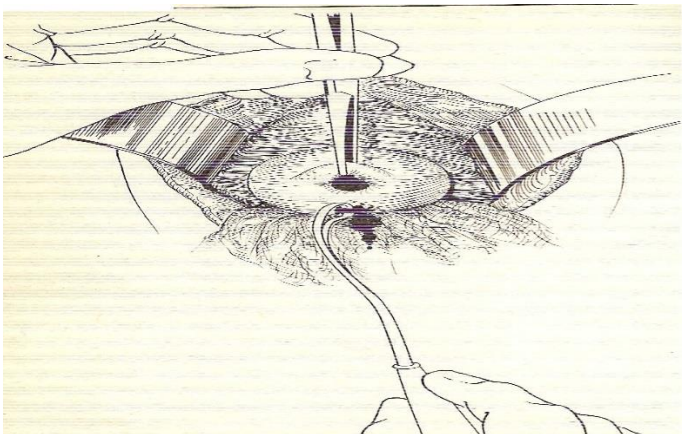
- Associated with incomplete abortion
- Associated with fever
- Foul smelling vaginal discharge
- Can lead to TSS (Toxic Shock Syndrome), Septicemia, Kidney Failure and Death
- Management:
  - Broad Spectrum Antibiotics (Combination of Penicillin (G+), Gentamycin (G-), Clindamycin (Anaerobic))
  - Dilatation and Curettage
  - Tetanus toxoid
  - Rh (D Antigen) immunoglobulin (RhIg) given to Rh Negative mothers to prevent Isoimmunization

NURSING INTERVENTIONS:

- save all tissue passed
- keep client at rest and teach reason for bed rest
- prepare client for surgical intervention (D&C)
- provide discharge teaching about limited activities and coitus after bleeding ceases
- observe reaction of other and others, provide emotional support, and give opportunity to express feelings of grief and loss
- administer RHogam if mother Rh negative



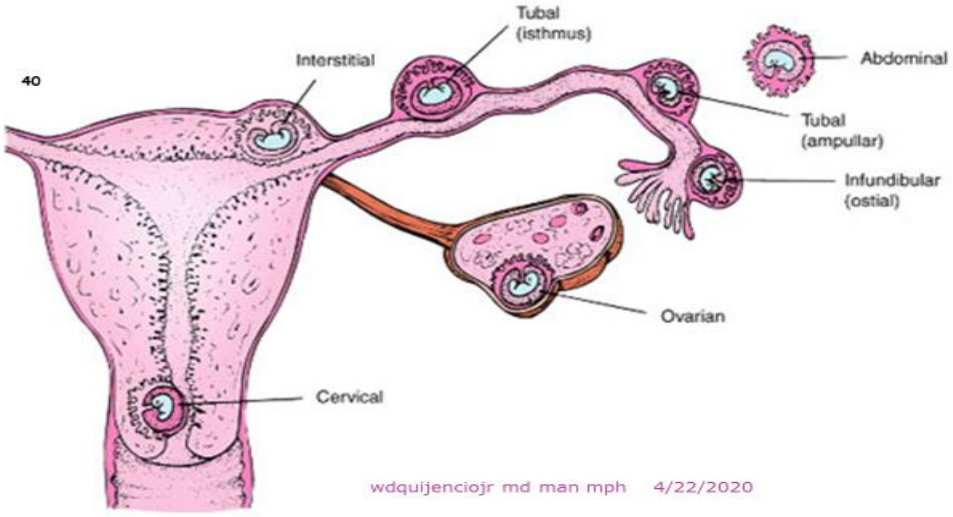
CURRETAGE



II. ECTOPIC PREGNANCY

SITES OF ECTOPIC PREGNANCY

☐ Fallopian tubes
☐ Cervix
☐ Uterine cornu
☐ Ovaries
☐ Abdomen
☐ Broad ligament



RISK FACTORS:

A. MAJOR RISKS

- Prior tubal surgery/ectopic pregnancy
- Use of intrauterine device

- Tissue insult resulting from pelvic inflammatory disease

B. MINOR RISKS

- Prior abdominal or pelvic surgery
- Prior appendicitis
- Salpingitis isthmica nodosa
- In utero diethylstilbestrol (DES) exposure
- In vitro fertilization and embryo transfer (IVF-ET)

OTHERS:

- Cigarette smoking
- Sex steroids

ASSESSMENT FINDINGS

☐ history of missed periods and symptoms of early pregnancy
☐ abdominal pain, may be localized to one side
☐ rigid tender abdomen; sometimes abnormal pelvic mass
☐ bleeding; if severe may lead to shock
☐ low hemoglobin and hematocrit, rising white cell count
☐ HCG titers usually lower than in intrauterine pregnancy
☐ knife-like pain in lower quadrant; shoulder pain
☐ nausea and vomiting
☐ dark red vaginal spotting
☐ Unilateral abdominal cramping and tenderness
☐ + Cullen's sign – bluish tinge at the peri-umbilical area
☐ Mass at the cul de sac of douglas; + blood during needle aspiration (Culdocentesis)

DIAGNOSIS

➢ **CLINICAL PRESENTATION**:

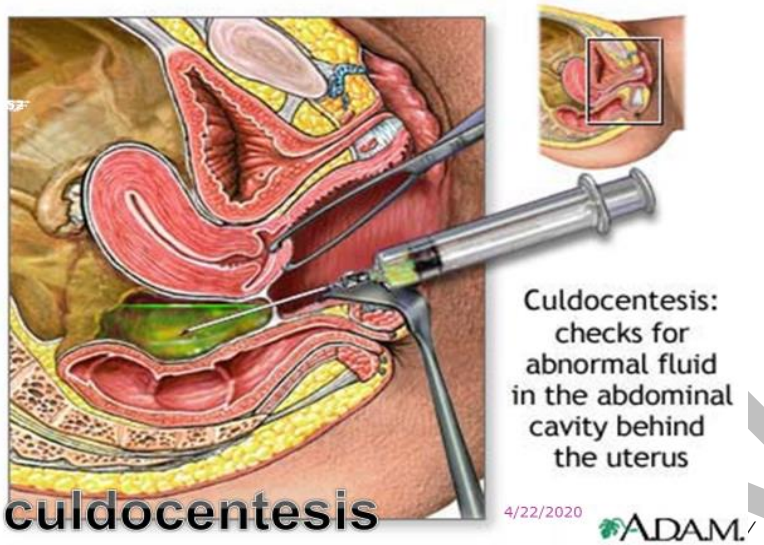
- ☐ Abdominal pain
- ☐ Vaginal bleeding
- ☐ Amenorrhea

➢ **DIAGNOSTIC WORK UP**

- ☐ HCG assays
- ☐ Ultrasonography
- ☐ Progesterone levels
- ☐ Culdocentesis
- ☐ Laparoscopy

MANAGEMENT:
Ruptured Ectopic Pregnancy is an emergency requiring immediate intervention

- ☐ Salpingostomy – if Fallopian tube can still be replaced and preserved, pregnancy is terminated
- ☐ Saphingectomy – removal of FT
- ☐ Methotrexate/1 mg/kg per day (D 1,3,5,7)/Asymptomatic, motivated/Low serum B-HcG level (<1000 mIU/ml)/Small ectopic pregnancy size (<3.5 cm) / Absent fetal cardiac activity/Adverse effect: Liver involvement, stomatitis, gastroenteritis



COMPLICATION OF ABORTION

- ☐ Hemorrhage
- ☐ Infection

NURSING INTERVENTIONS

- ☐ Help woman to combat shock
- ☐ Elevate foot of the bed
- ☐ Maintain body heat
- ☐ Prepare for surgery
- ☐ Monitor for shock preoperatively and postoperatively
- ☐ Provide emotional support and expression of grief
- ☐ Administer Rhogam to Rh negative women
- ☐ Discharge teaching

III. HETEROTOPIC PREGNANCY

- ➢ ☐ A tubal pregnancy with co-existing intrauterine pregnancy

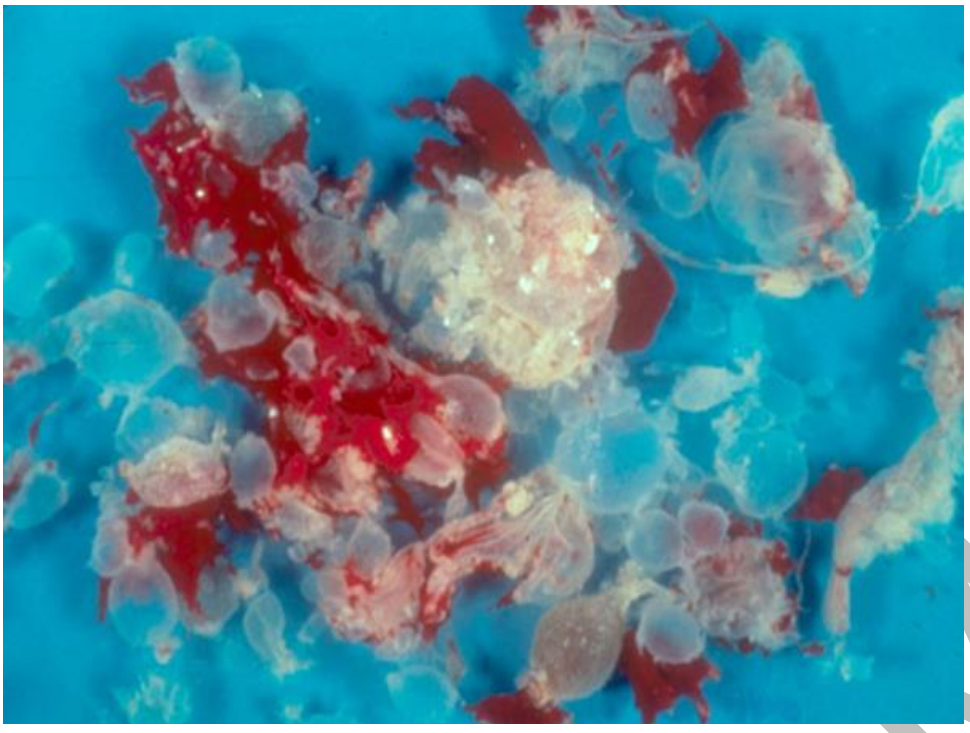
IV. HYDATIDIFROM MOLE (GESTATIONAL THROPHOBLASTIC DISEASE)

- **GENERAL INFORMATION**

  - a form of trophoblastic neoplasia which may lead to a frankly malignant proliferation of trophoblast cells known as choriocarcinoma
  - to the naked eye the mole looks like a bunch of whitish grapes, often interspersed with blood clot
  - microscopically the villi show three changes: trophoblastic proliferation of both the cytotrophoblast and the syncythiotrophoblast, hydropic changes in the stroma, with cistern formation, absence of fetal vessels

- **TYPES:**
  - COMPLETE MOLE
    - there is total hydatidiform change with no evidence of fetal circulation
    - proliferation of the trophoblast cells is marked
    - the karyotype is 46xx derived from paternal contribution
    - fertilization is by haploid (23x) sperm which duplicates its chromosomes without cell division
    - more likely to develop malignant change
  - PARTIAL MOLE
    - associated with a fetus
    - hydatidiform change is variable
    - trophoblast proliferation is of moderate degree
    - karyotype is abnormal and chromosome is triploid 69 xxx or xxy
    - less likely to develop malignant change

- **SYMPTOMS**
  - Bleeding
  - Hyperemesis
  - pallor and dyspnea
  - anxiety and tremor
- **SIGNS**
  - uterine enlargement
  - absent fetal heart
  - absent fetal parts
  - signs of pre-eclampsia
  - unexplained degree of anemia
  - passage of vesicles per vagina
  - signs of hyperthyroidism

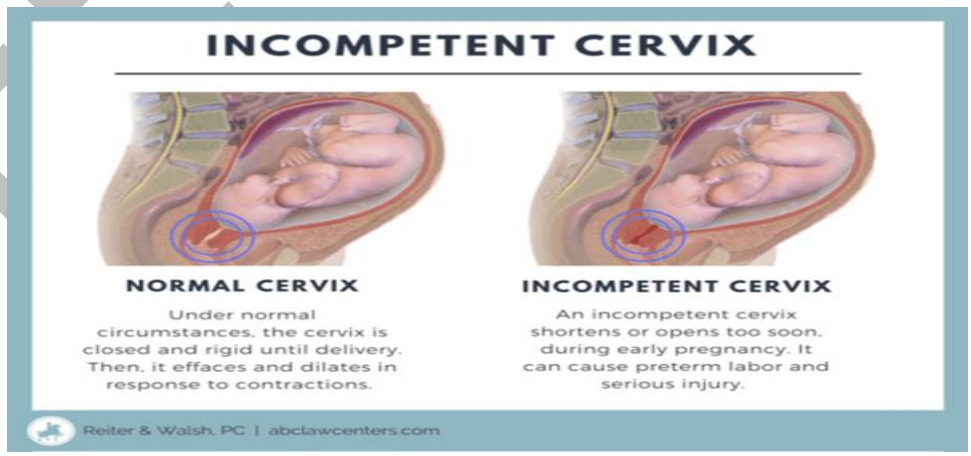


NURSING INTERVENTION:

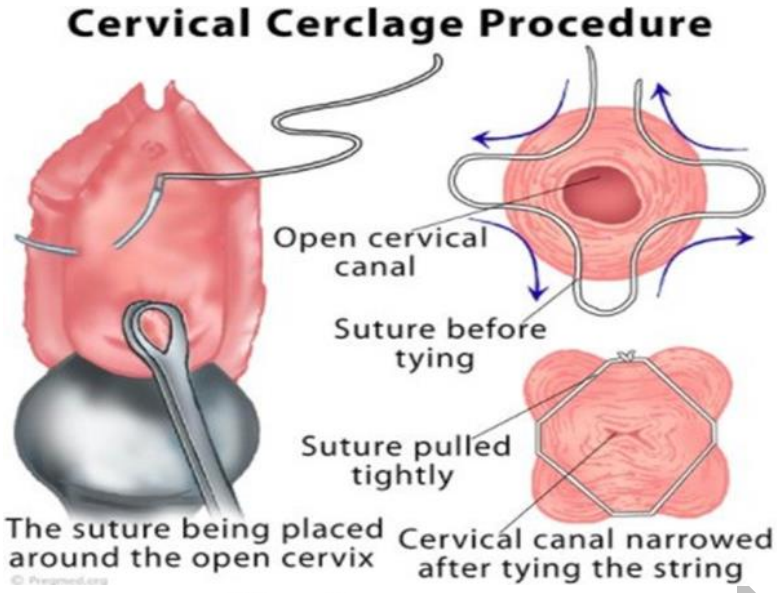
- ☐ provide pre- and post operative care for evacuation of uterus (suction curettage)
- ☐ teach contraceptive use so that pregnancy is delayed for at least one year
- ☐ teach client need for follow-up lab work to detect rising HCG levels indicative of choriocarcinoma
- ☐ provide emotional support for loss of pregnancy
- ☐ teach about risk for future pregnancies, if indicated

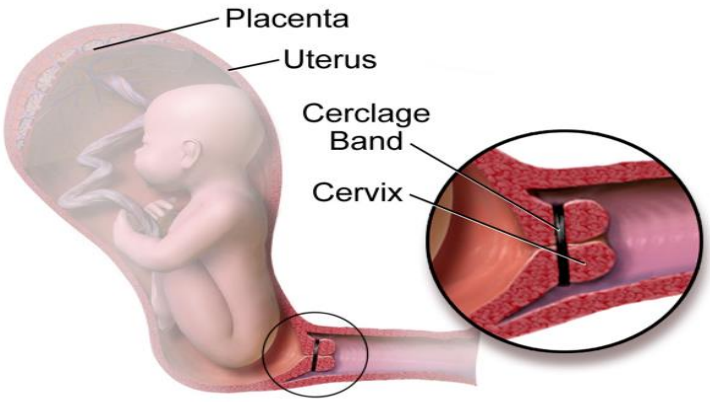
VII. INCOMPETENT CERVICAL OS (Premature dilation of cervix)

- General Information: painless condition in which the cervix dilates without uterine contractions and allows passage of the fetus usually the result of prior cervical trauma
- **ASSESSMENT FINDINGS:**
  - history of repeated, relatively painless abortions
  - early and progressive effacement and dilation of cervix
  - bulging of membranes through cervical os



- MEDICAL MANAGEMENT:
  - Cervical Cerclage done during the 12th – 14th week of gestation thru vaginal route by regional anesthesia
    - Shirodkar Procedure - permanent type; suture is threaded in the submucous layer of the cervix
    - McDonald Procedure – nylon sutures are placed horizontally and vertically across the cervix and pulled tight to reduce the cervical canal. Sutures are removed at 37 – 38th week of gestation.
  - After cerclage advised for bedrest and placed on slight modified trendelenburg position for a few days





- **NURSING INTERVENTIONS:**
  - continue observations for contractions, rupture of membranes, and monitor fetal heart tones
  - position client to minimize pressure on cervix

THIRD TRIMESTER COMPLICATIONS

A. PLACENTA PREVIA

- low implantation of the placenta so that it overlays some or all of the internal cervical os
- cause uncertain, but uterine factors (poor vascularity, fibroid tumors, multiple pregnancies) maybe involved
- amount of cervical os involved classifies placenta previa as marginal, partial, or complete

- RISK FACTORS:
  - Prior previa (4-8%)
  - First subsequent pregnancy following a cesarean delivery/Multiparity (5% in grand multiparous patients)
  - Advanced maternal age
  - Multiple gestations
  - Prior induced abortion/Smoking

TYPES OF PLACENTA PREVIA:

1. Total – cervical os is completely covered
2. Partial – internal os is partially covered
3. Marginal – edge of placenta is at the margin
4. Low lying – implanted in the lower segment; edge does not reach internal os

ASSESSMENT FINDINGS:

- ☐ bright red vaginal bleeding after seventh month of pregnancy is cardinal indicator – intermittent, gushes or continuous
- ☐ uterus remains soft
- ☐ FHR usually stable unless maternal shock present
- ☐ Vaginal examination can result in severe bleeding and should only be undertaken if fetus is mature enough to be born or if recurring hemorrhage demands immediate delivery
- ☐ Diagnosis by sonography

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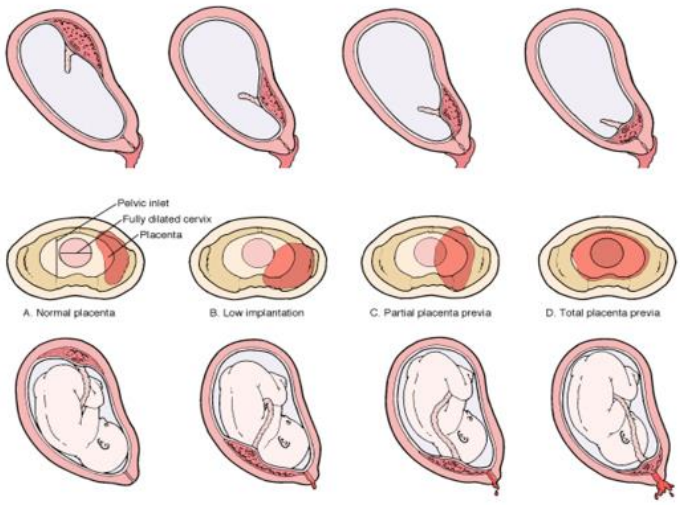
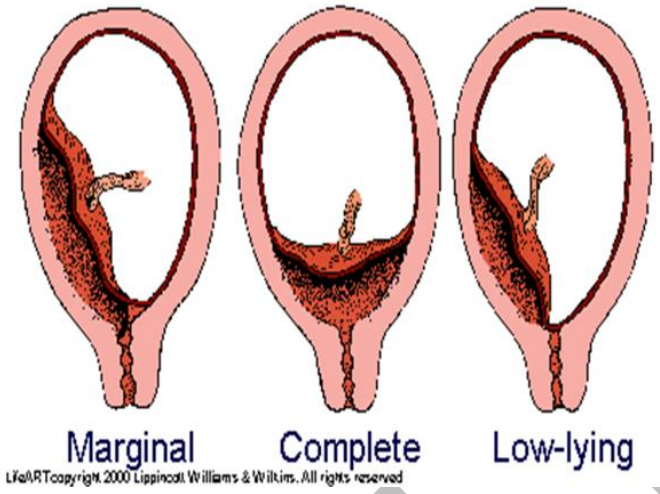


Figure 2-2 Variations of placenta previa. **(A)** Normal placenta. **(B)** Low implantation. **(C)** Partial placenta previa. **(D)** Total placenta previa. wdquijencio jr md man mph 4/22/2020



NURSING INTERVENTIONS:

- ☐ Hospitalization, initially
- ☐ Bedrest side-lying or Trendelenberg position for at least 72 hrs.
- ☐ Ultrasound to locate placenta
- ☐ No vaginal, rectal exam unless delivery would not be a problem (if necessary must be done in OR under sterile conditions)
- ☐ Amniocentesis for lung maturity; monitor for changes in bleeding and fetal status
- ☐ Daily Hgb and Hct
- ☐ Two units of cross matched blood available
- ☐ Monitor amount of blood loss
- ☐ Send home if bleeding ceases and pregnancy is maintained
- ☐ Limit activity
- ☐ No douching, enemas, coitus
- ☐ Monitor fetal movement
- ☐ NST at least every 1 – 2 weeks
- ☐ Monitor complications
- ☐ Delivery by cesarean if evidence of fetal maturity, excessive bleeding, active labor, other complications

B. APRUPTIO PLACENTA

- GENERAL INFORMATION

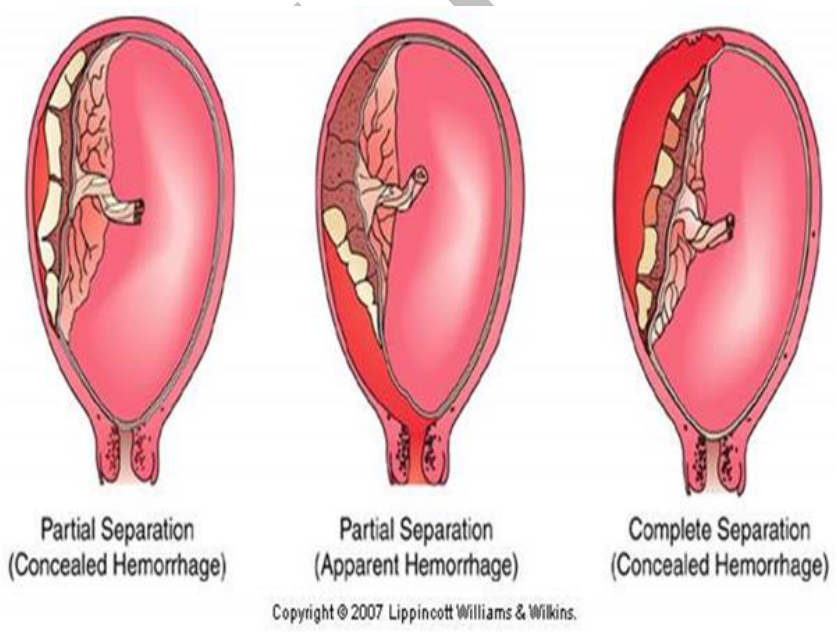
  - Separation of placenta from part or all of normal implantation site, accompanied by pain
  - Occurs after 20th week AOG
  - Seen in women with HPN, previous abruption placenta, late pregnancies, multigravids
  - Cause is unknown

  Alternative Names:

  - Premature separation of placenta
  - Accidental hemorrhage
  - Ablatio placentae
  - Abruptio placentae
  - Placental abruption

  RISK FACTORS:

  - Increased maternal age
  - Increased number of prior deliveries
  - Increased uterine distention
  - Diabetes in the pregnant woman
  - Cigarette smoking
  - Cocaine abuse
  - Drinking more than 14 alcoholic drinks per week during pregnancy



ASSESSMENT FINDINGS:

- Painful vaginal bleeding
- Tender boardlike uterus
- Slow or absent fetal heart tones
- Signs of shock

TYPES OF ABRUPTIO PLACENTA:

1. MARGINAL (OVERT)
2. CENTRAL (CONCEALED

MANAGEMENT:

- Obtain intravenous access using 2 large-bore intravenous lines.
- Institute crystalloid fluid resuscitation for the patient.
- Type and crossmatch blood.
- Begin a transfusion if the patient is hemodynamically unstable after fluid resuscitation.
- Correct coagulopathy, if present.
- Administer Rh immune globulin if the patient is Rh-negative.
- Vaginal delivery preferred method of delivery for a fetus that has died secondary to placental abruption.
- **Surgical Care:** Cesarean delivery
    - Cesarean delivery is often necessary for both fetal and maternal stabilization.
    - If hemorrhage cannot be controlled after delivery, a cesarean hysterectomy may be required to save the patient's life (Couvalaire Uterus)
- Ensure bed rest check maternal/fetal vital signs
- Prepare for IV infusions of fluids/blood
- Monitor urinary output
- Anticipate coagulation problems (DIC)
- Provide support to parents as outlook for fetus is poor
- Prepare for emergency surgery as indicated
- Bedrest
- Vital signs, FHT
- Monitor intake and output
- Seizure precautions
- Medications (Magnesium sulfate, Apresoline, Valium)
- Assist with appropriate treatment
- Prevent excessive blood loss and resulting complications
- Provide physical and emotional support
- Provide client and family education

MEDICAL COMPLICATIONS IN PREGNANCY

I. HYPEREMESIS GRAVIDARUM

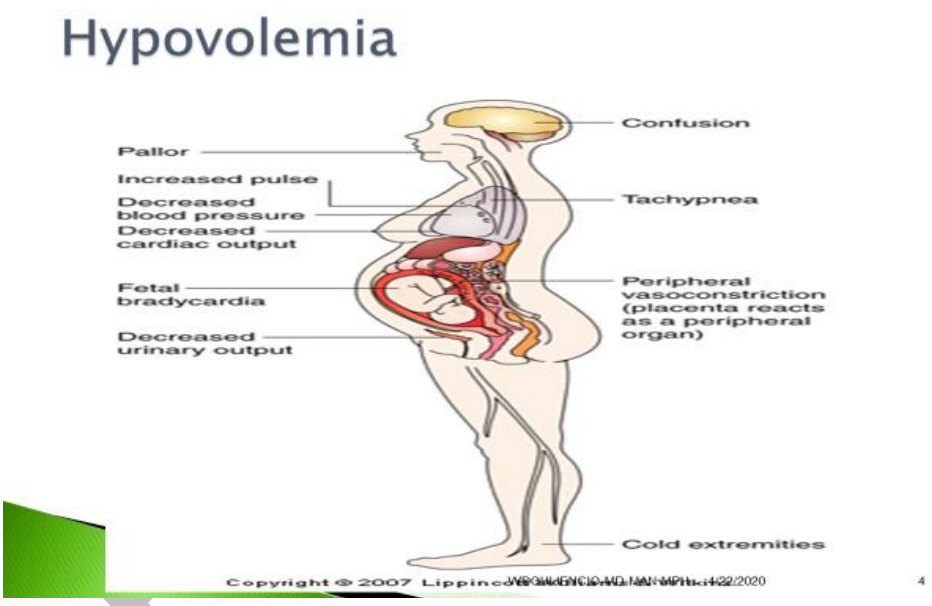
• Persistent, excessive vomiting that causes dehydration and starvation

CAUSES:

1. Psychological factors
2. Hormonal factors
3. Multiple pregnancy
4. Hydatidiform mole

Management:

- Fluid and electrolytes
- Vitamins and mineral replacement
- Bedrest in less stimulating environment
- Strict hygiene
- Close monitoring for fetal and maternal distress



II. HYPERTENSION DISORDERS IN PREGNANCY

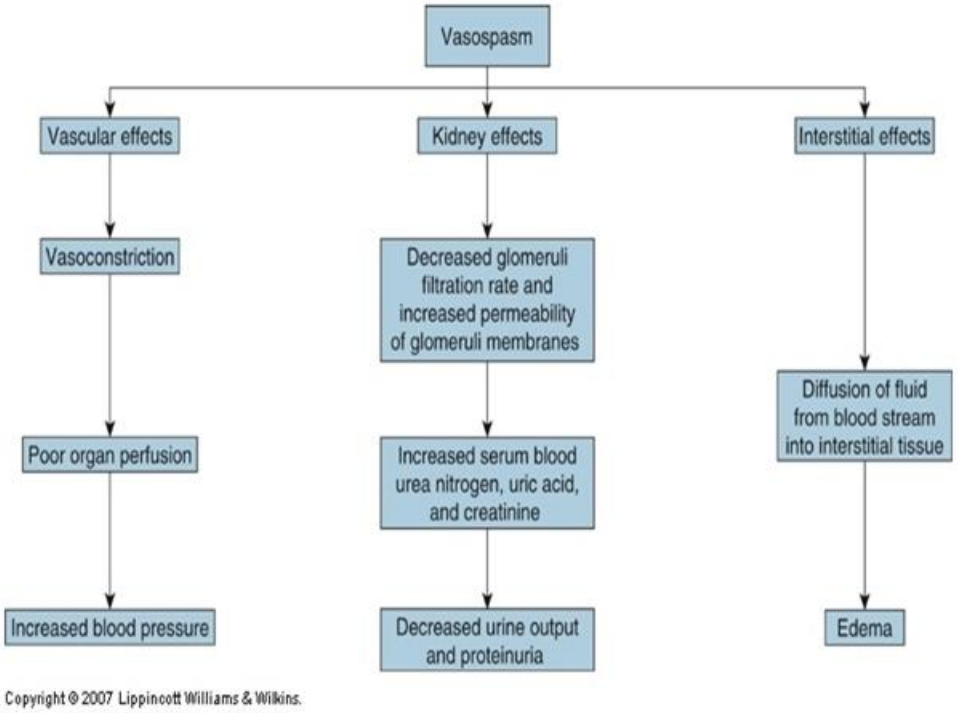
- leading cause of infant and maternal mobidity and mortality worldwide
- second leading cause of maternal mortality which accounts for 26.92%
- etiology of PIH are increased vasoconstrictor tone, abnormal prostaglandin action.
- main pathogenic factor is poor perfusion secondary to vasospasm

- **GENERAL INFORMATION**:

  - Common in those age below 17 years or more than 35 years
  - Protein malnutrition ,primipara, diabetes
  - Little or no prenatal care, low socio-economic status, previous history of hypertension

- **PREDISPOSING FACTORS:**

  - Large fetus
  - Older than 35, younger than 17
  - Primigravida
  - Multiple pregnancy or H mole
  - Poor nutrition
  - Hx of DM, renal and vascular disease
  - Morbid obesity or weight less than 100 lb } Family history



DIAGNOSIS:

- ***Roll – over test*** **:** Assess the probability of developing toxemia when done between the 28th and 32nd week of pregnancy.
- **Procedure of Roll-over test:**
  - Patient in lateral recumbent position for 15 minutes until BP Stable
  - Rolls over to supine position
  - BP taken at 1 minute and 5 minutes after roll over
  - Interpretation: If diastolic pressure increases 20 mmHg or more, patient is prone to Toxemia

CLINICAL CLASSIFICATION OF HYPERTENSIVE DISORDERS IN PREGNANCY

1. **Pregnancy-induced hypertension (PIH**)
    a. Gestational hypertension
    b. Preeclampsia – mild or severe
    c. Eclampsia
2. **Chronic hypertension**
    a. Chronic hypertension of any etiology
    b. Preeclampsia superimposed on chronic hypertension

Classic triad of symptoms: edema/weight gain, hypertension, and proteinuria.

- Eclampsia includes convulsions and coma
- Possible life-threatening complication: HELLP syndrome (hemolysis, elevated liver enzymes, lowered platelets)
- Only known cure is delivery

A. GESTATIONAL HYPERTENSION

- ASSESSMENT FINDINGS:

    a. Appearance of symptoms between 20th and 24th weeks of pregnancy
    b. Blood pressure of 140/90 or +30/+15 mm Hg on two consecutive occasions at least 6 hours apart
    c. No proteinuria
    d. No edema

DIAGNOSTIC CRITERIA FOR PREGNANCY ASSOCIATED HYPERTENSION

Condition	Criteria Required
Gestational hypertension	BP > 140/90 mmHg after 20 weeks in previously normotensive women
Preeclampsia—Hypertension and:	
Proteinuria	• ≥ 300 mg/24h, or • Protein: creatinine ratio ≥ 0.3 or • Dipstick 1+ persistent[a]
	or
Thrombocytopenia	• Platelets < 100,000/μL
Renal insufficiency	• Creatinine > 1.1 mg/dL or doubling of baseline[b]
Liver involvement	• Serum transaminase levels[c] twice normal
Cerebral symptoms	• Headache, visual disturbances, convulsions
Pulmonary edema	—

[a]Recommended only if sole available test.
[b]No prior renal disease.
[c]AST (aspartate aminotransferase) or ALT (alanine aminotransferase).
Modified from the American College of Obstetricians and Gynecologists, 2013b.

B. MILD PRE-ECLAMPSIA

ASSESSMENT FINDINGS:

- appearance of symptoms between 20th and 24th weeks of pregnancy
- blood pressure of 140/90 or +30/+15 mm Hg on two consecutive occasions at least 6 hours apart
- sudden weight gain (+3lb/month in second trimester; +1 lb/week in third trimester; +4.5 lb/week at any time)
- slight generalized edema, especially of hands and face (+1 +2
- proteinuria of 300 mg/liter in a 24 hour specimen (+1)

C. SEVERE PRE-ECLAMPSIA

ASSESSMENT FINDINGS:

- Blood pressure of 150-160/100-110 }
- Increased edema (+3 +4)
- Weight gain (>5 lbs / week)
- Proteinuria (>5 g/24 hours) or (+4) }
- Oliguria < 400 - 500 ml

INDICATORS OF SEVERITY OF HYPERTENSIVE DISORDERS

Abnormality	Nonsevere[b]	Severe
Diastolic BP	< 110 mm Hg	≥ 110 mm Hg
Systolic BP	< 160 mm Hg	≥ 160 mm Hg
Proteinuria[c]	None to positive	None to positive
Headache	Absent	Present
Visual disturbances	Absent	Present
Upper abdominal pain	Absent	Present
Oliguria	Absent	Present
Convulsion (eclampsia)	Absent	Present
Serum creatinine	Normal	Elevated
Thrombocytopenia (< 100,000/μL)	Absent	Present
Serum transaminase elevation	Minimal	Marked
Fetal-growth restriction	Absent	Obvious
Pulmonary edema	Absent	Present

[a]Compare with criteria in Table 40-1.
[b]Includes "mild" and "moderate" hypertension not specifically defined.
[c]Most disregard degrees of proteinuria as being nonsevere or severe.
BP = blood pressure.

D. ECLAMPSIA

ASSESSMENT FINDINGS

- increased hypertension precedes convulsion followed by hypotension and collapse
- coma may ensue
- labor may begin, putting fetus in great jeopardy
- convulsion may recur

NURSING INTERVENTIONS:

- Minimize all stimuli
    - Darken room
    - Limit visitors
    - Use padded bedsides and bed rails
- Check vital signs and lab values frequently
- Have airway, oxygen, and suction equipment available
- Administer medications as ordered
- Monitor fetal status
- Type and cross match for blood
- Continue observations 24-48 hours postpartum
- Prepare for possible delivery of fetus

MANAGEMENT FOR ECLAMPSIA:

1. Digitalis (with Heart Failure)
    - Increase the force of contraction of the heart→decrease heart rate
    - Nursing Considerations: Check CR prior to administration (do not give if CR <60/min)
2. Potassium supplements – prevent arrhythmias
3. Barbiturates – sedation by CNS depression
4. Analgesics, antihypertensive, antibiotics, anticonvulsants, sedatives
5. Magnesium Sulfate – drug of choice
    - Action: CNS depressant; Vasodilator
    - Antidote: Calcium Gluconate- given 10% IV to maintain Cardiac and vascular tone
      Earliest sign of MgSO4 toxicity→disappearance of knee jerk/patellar reflex

- Method of delivery – preferably Vaginal but if not possible CS
- Prognosis: the danger of convulsions is present until 48 hrs postpartum

- MAGNESIUM SULFATE:
  Dosage: 10 gms initially –either by slow IV push over 5 – 10 minutes or deep IM, 5 gms/buttock, then an IV drip of 1 gm per hour (1 gm/100 ml D10W),

  Check first the ff. before administration:

  - Deep tendon reflexes are present
  - Respiratory rate = 12 / min
  - UO = at least 100 ml / 6 hrs.

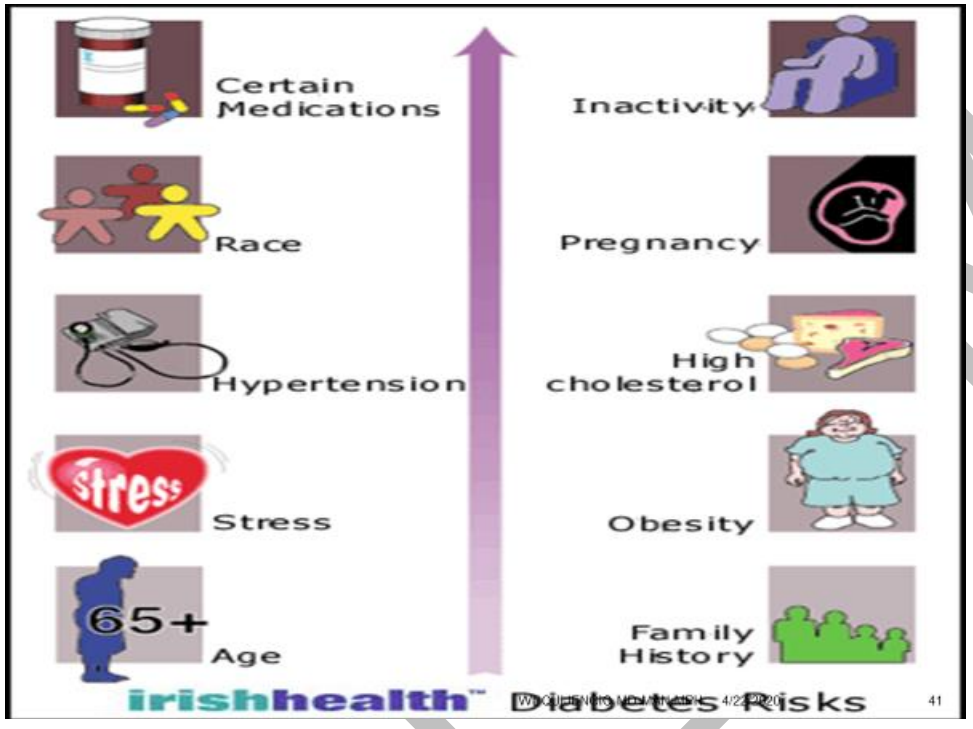
  PLANNING AND IMPLEMENTATION:

  - Obtain Daily Weights
  - Monitor intake and output
  - Monitor BP, edema, urine and reflexes
  - Maintain on bedrest in side-lying position
  - Monitor FHR, observe for bleeding
  - Maintain a quiet environment; limit visitors
  - Monitor hematologic studies to prevent HELLP Syndrome (H – hemolysis, E – elevated liver enzymes, L – low platelet count
  - Monitor administration of Magnesium Sulfate / Watch for signs of magnesium toxicity: Maintain seizure precaution (AURA, TONIC, CLONIC, POST ICTAL)
  - Monitor progress of labor
  - Provide emotional support

III. DIABETES MELLITUS

- Chronic hereditary disease characterized by marked hyperglycemia
- Due to lack or absence of insulin →abnormalities in CHO, fat and protein metabolism
- Excess glucose moves across placenta to fetus, where fetal insulin metabolizes it and *acts as growth hormone*, promoting *macrosomia.*
- Higher incidence of fetal anomalies and neonatal hypoglycemia *(good control minimizes)*
- Occurs in 3 – 5% of all pregnancies (Gabbe, 2003)
- Reproductive Planning: Norplant or Depo Provera
  - Progesterone – interferes with insulin activity and increases blood glucose levels
  - Estrogen – potential for increasing lipid and cholesterol levels and blood coagulation
- Reproductive Planning good choice is Norplant or Depo Provera
  - IUD – prone to PID as Diabetic women cannot fight infections
- Infants with DM are 5X more apt to have Congenital Heart Anomalies
- All women appear to develop an insulin resistance as pregnancy progresses.
- Caused by the presence of
  - Human placental lactogen
  - High levels of cortisol
  - Increase estrogen
  - Increase progesterone
  - Increase catecholamines
  - Increase placental insulinase – which increase breakdown and degradation of insulin

- Increase insulin dosage beginning in about week 24 of pregnancy to prevent hyperglycemia.
- Continued use of glucose by the fetus may result to hypoglycemia
- Mothers may become ketoacidotic during the 2nd to 3rd trimester
- Increasing amount of amniotic fluid can result to preterm labor – fetuses has increased If a woman has pre-existing kidney problems, this results to Fetal Growth restriction, Asphyxia and Stillbirth.
- Macrosomic infant may create birth problems due to CPD or shoulder dystocia
- Uncontrolled DM will result to a higher congenital anomaly such as caudal regression syndrome, spontaneous abortion, and stillbirth.
- At birth, Neonates are prone to Hypoglycemia, Respiratory Distress syndrome,
- Hypocalcemia and Hyperbilirubinemia



RISK FACTORS OF DM:

- Overweight or obesity.
- Family history of type 2 diabetes.
- Racial/ethnic group with a high prevalence of diabetes.
- Previous pregnancy with gestational diabetes.
- Previous large baby.
- Previous stillbirth.
- First degree relative with diabetes.
- Polycystic ovary syndrome (PCOS) or other conditions of insulin resistance.
- Hypertension.

CLASSIFICATION OF DM:

1. Type 1: formerly called juvenile-onset or insulin-dependent diabetes; onset before age 40
2. Type 2: formerly called maturity-onset or non-insulin-dependent; onset after age 40
3. **Type 3**: formerly called **gestational**; onset during pregnancy; reversal after termination of pregnancy

4. **Type 4**: formerly called **secondary**; occurs after pancreatic infections or endocrine disorder

    - Type I IDDM – destruction of beta cells in the pancreas usually leads to absolute insulin deficiency.
    - Type 2 NIDDM – due to insulin resistance combined with relative deficiency in the production of insulin.
    - Gestational Diabetes / Impaired Glucose Homeostasis

- **ASSESSMENT FINDINGS:**

    a. Polyuria
    b. Polydipsia
    c. Weight loss
    d. Polyphagia
    e. *Elevated glucose levels in blood and urine*. Urine tests for elevated blood glucose less reliable in pregnancy

MATERNAL EFFECTS:

- Uteroplacental Insufficiency
- Risk of dystocia
- Polyhydramnios
- Infection

FETAL EFFECTS:

- fetal mortality
- Risk of congenital abnormalities
- hypoxia -delayed lung maturity
- LGA infants
- Neonatal hypoglycemia

Blood tests (more accurate) used as follows:

- 1-hour glucose tolerance test: usually done for screening on all pregnant women 24-28 weeks pregnant.
- 3-hour glucose tolerance test: used where results from 1hour GTT > 140 mg/dl.
- HbAlc: glycosylated hemoglobin; reflects past 4-12 week blood levels of serum glucose.

DIABETES MELLITUS

	50 GRAM, 1-HOUR SCREEN	
1-hr plasma glucose	≥130, 135 or 140 mg/dL	
	100 GRAM, 3-HOUR OGTT	
	Carpenter/Coustan	NDDG
Fasting plasma glucose	≥95 mg/dL	≥105 mg/dL
1-hr plasma glucose	≥180 mg/dL	≥190 mg/dL
2-hr plasma glucose	≥155 mg/dL	≥165 mg/dL
3-hr plasma glucose	≥140 mg/dL	≥145 mg/dL

Is diagnosed if 2 or more OGTT values are met or exceeded.

MANAGEMENT:

- Maintenance of optimal circulating glucose levels
- Glycemic control
- Diet - highly individualized
  - adequate glucose intake (1,800 –2200 calories) to prevent intrauterine growth retardation
- Insulin requirements – individualized; increased during 2nd and 3rd trimester because of more pronounced effect of hormones
- Method of Delivery – Cesarean Section
- Postpartum Period – more difficult to control Blood Glucose because of hormonal changes
- Glycemic Control Monitoring

Time of testing	Target glucose level
Fasting	≤ 95 mg/dl
1-hour post prandial	≤140 mg/dl
2-hours post prandial	≤120 mg/dl

- Lifestyle interventions
- Pharmacologic interventions

DIETARY CONTROL

- Difficult during pregnancy due to nausea and vomiting. If cannot have intake resort to IV fluid supplementation
- 1800 to 2200 caloric diet for 35 Kcal per kg of ideal weight. Calories are divided into 3 meals and 3 snacks to keep serum glucose level constant.
- Diet include reduced amount of saturated fats and cholesterol and increased amount of dietary fiber (this increases postprandial hyperglycemia)

PHARMACOLOGICAL

- Insulin
- Early pregnancy – may need less insulin because fetus is using so much glucose for rapid cellular growth
- Later in pregnancy – needs increased amount because of higher metabolic rate and need
- Oral Hypoglycemic agents are not used because they cross the placenta and are potentially teratogenic
- Use of insulin pump therapy

INSULIN MANAGEMENT

HUMAN INSULINS	Onset of action	Peak	Duration
Short-Acting: Regular (crystalline zinc insulin) (Novolin R@ or Humulin R@)	30-60 minutes	2-4 hours	6-12 hours
Intermediate-Acting: NPH (neutral protamine Hagedorn) (Humulin N@ or Novolin N@)	1-2 hours	4-14 hours	10-24 hours
RAPID ACTING ANALOGS			
insulin lispro (Humalog@)	<30 minutes	30-90 minutes	<6 hours
insulin aspart (NovoLog@)	<15 minutes	1-3 hours	3-5 hours
insulin glulisine (Apidra@)	<30 minutes	30-90 minutes	<6 hours
LONG ACTING ANALOGS			
insulin detemir (Levemir@)	1 hour	no peak	6-23 hours
insulin glargine (Lantus@)	1 hour	no peak	24 hours
note: long-acting analogs should not be mixed with other types in the same syringe			

TESTS FOR PLACENTAL FUNCTION AND FETAL WELL BEING

- Serum alpha-feto protein level obtained at 15 – 17 weeks to assess for neural tube defects
- Ultrasound at 18 to 20 weeks to detect gross abnormalities, fetal growth, amniotic fluid volume, placental location and biparietal diameter.
- Creatinine Clearance test for each trimester to assess adequate uterine perfusion.
- Weekly Non-stress test or biophysical profile during the last trimester; Movements in an hour = 10 movements
- Lecithin – Sphingomyelin ratio
- Phosphatidyl glycerol at amniocentesis is used to assess lung maturity instead of L/S ratio (For DM mothers)

Signs and symptoms of Diabetic Babies/ Hypoglycemic Infant:

- Shrill, high pitched cry Listlessness/jitteriness/tremors Lethargy/poor suck Apnea/cyanosis
- Hypotonia; hypothermia
  Consequence of hypoglycemia: untreated hypos , brain damage and even death
- ***Management: feed with glucose water earlier than usual, or administer IV of glucose

IV. HEART DISEASE

- CLASSIFICATION:
  - **Class I**
    - NO physical limitation
    - NO symptoms of cardiac insufficiency
  - **Class II**
    - SLIGHT limitation of physical activity
    - ASYMPTOMATIC at rest
    - Ordinary activity causes fatigue, palpitation, dyspnea, or angina
  - **Class III**
    - Moderate to marked limitation of physical activity
    - Less than ordinary activity causes discomfort
  - **Class IV**
    - Unable to carry on any activity without experiencing discomfort
    - May have symptoms even at rest

  PROGNOSIS:

  - **Classes I & II – normal pregnancy & delivery**
  - **Classes III & IV – poor candidates**

Congestion of liver and other organs due to inadequate venous return → increased venous pressure → fluid escapes through the walls of engorged capillaries - cause edema and ascites

CHF is a high probability due to increased CO during pregnancy → dyspnea, exhaustion, edema, pulse irregularities, chest pain on exertion and cyanosis of nailbeds are obvious

Implementation:

- Report URI and coughing during pregnancy – as pulmonary edema is first manifested as cough
- Edema
- Irregular pulse, rapid and difficult respiration
- Chest pain on exertion
- Jugular Venous exertion
- ECG, chest x-ray, echocardiogram

Effects on the FETUS: Due to poor perfusion

- IUGR (INTRAUTERINE GROWTH RETARDATION)
- Fetal Distress
- Preterm labor

Management: (depends on cardiac functional capacity)

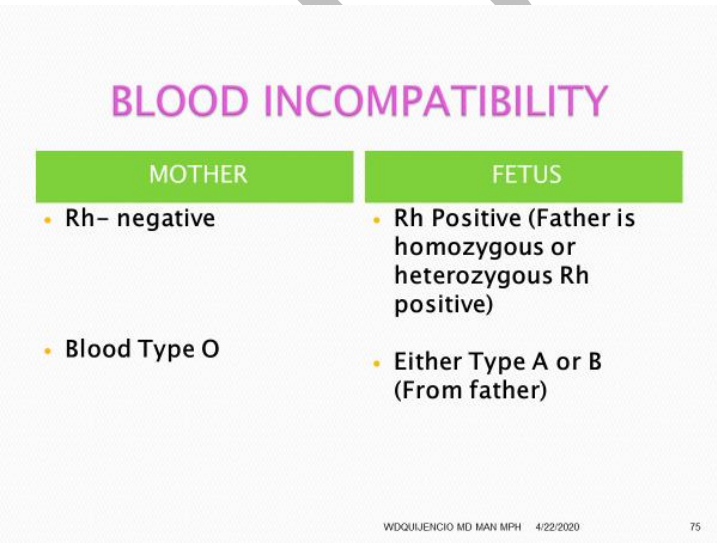
- Bed rest – especially after 30th week of gestation
- Diet – gain enough (consider effect on cardiac workload)
- Medications: Digitalis, Iron preparations
- Avoid lithotomy position to avoid increase in venous return, place in semi-sitting position
- Not allowed to bear down
- Birth is via low forceps or Cesarean section
- Anesthetic choice – caudal anesthesia
- Ergotrate and other oxytoxics, scopolamine, diethylstilbestrol and oral contraceptives – contraindicated - can cause fluid retention and promote thromboembolism
- Most critical period: immediate postpartum period when 30 – 50% increased blood volume is reabsorbed back in 5 – 10 minutes and the weak heart needs to adjust

NURSING INTERVENTIONS:

- Promote rest
- Promote Healthy Nutrition – Must not gain too much weight; Intake of prenatal vitamins especially iron supplement to prevent anemia; limit sodium intake.
- Educate regarding medication – Increase maintenance dose during pregnancy ex digoxin, propanolol, nitroglycerin and penicillin Educate regarding avoidance of infection

V. BLOOD INCOMPATIBILITY

 An antigen-antibody reaction which causes excessive destruction of fetal red blood cells



	Rh HDN	ABO HDN
Frequency	Less common	More common
Blood group		
Mother	Rh negative	O
Fetus	Rh positive	A or B
Pregnancy affected	Usually second	Usually first
Severity	Severe	Mild
Blood smear	Erythroblastosis	Spherocytosis
DCT	Strongly positive	Weakly positive or negative

VI. URINARY TRACT INFECTION General Information

1. Affect 10% of all pregnant women
2. Dilated, flaccid and displaced ureters are a frequent site.
3. E. coli is the usual cause
4. May cause premature labor if severe, untreated or pyelonephritis develops.

ASSESSMENT FINDINGS:

1. Frequency and urgency of urination
2. Suprapubic pain
3. Flank pain (if kidney involved)
4. Hematuria
5. Pyuria
6. Fever and chills

NURSING INTERVENTIONS:

1. Encourage high fluid intake
2. Provide warm baths to relieve discomfort and promote perineal hygiene
3. Administer and monitor intake of prescribed medications (antibiotics, urinary analgesics)
4. Stress good bladder-emptying schedule
5. Monitor for signs of premature labor from severe or untreated infection

VII. ANEMIA

General information

1. Low red cell count may be underlying condition
2. May or may not be exacerbated by physiologic hemodilution of pregnancy
3. Most common medical disorder of pregnancy

Assessment findings

1. Client is pale, tired, short of breath, dizzy
2. Hgb is **less than 11 g/dl**; hct **less than 37%**

Nursing Interventions

1. Encourage intake of foods with high iron content
2. Monitor iron supplementation.
3. Teach sequelae iron ingestion.
4. Assess need for parental iron.

VIII. SUBSTANCE ABUSE IN PREGNANCY

SIGNS AND SYMPTOMS: Physical signs Psychological signs Behavioral signs

PHYSICAL SIGNS:

- Slow weight gain
- Dryness of mouth and conjunctivitis in marijuana use
- Fetal growth retardation
- Appetite affected
- Increased activity level
- Altered sleep pattern
- Signs of respiratory and cardiovascular illness
- Rhinitis and sinusitis for marijuana
- Respiratory depression for narcotics
- Hypertension and tachycardia for amphetamines
- Examination of skin
- Needle marks
- Skin infection like boils and abscess
- Signs of STIs
- Fetus
    - Slow growth
    - Prematurity

PHYSCHOLOGICAL SIGNS:

- Euphoria
- Depression
- Rapid mood swings
- Paranoia
- Panic attacks
- Altered perception and psychosis for methamphetamines
- Lethargy, stupor and coma for narcotics

BEHAVIORAL SIGNS:

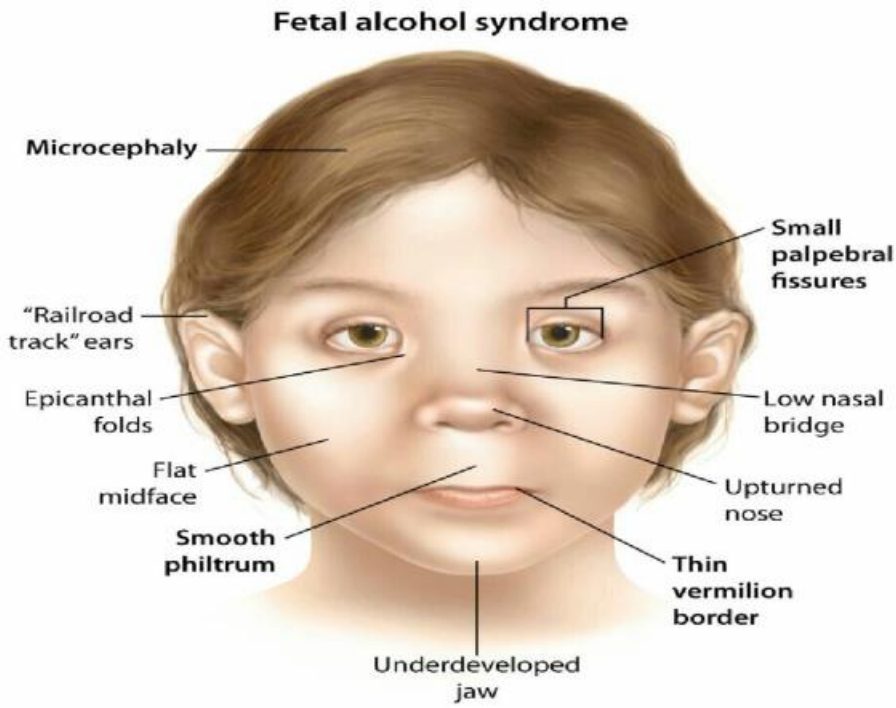
- Not keep appointments
- Reluctant to submit to urine testing
- Difficulty in keeping with instructions

EFFECTS OF DRUG USE ON THE WOMAN AND FETUS

ALCOHOL

- Fetal alcohol syndrome
- Pregnancy loss
- Spontaneous abortion
- Stillbirth

- Abruptio placenta



Methamphetamine or Shabu

- Elevation of body temperature
- Seizures
- Intracerebral hemorrhage
- Psychosis
- Hypertension and tachycardia
- Anorexia and malnutrition
- Sympathetic symptoms
  - Diaphoresis
  - Tachypnea
  - Muscle rigidity
  - Pulmonary edema
- Fetus
  - Premature labor
  - Distress and death }

Narcotics (heroin, morphine)

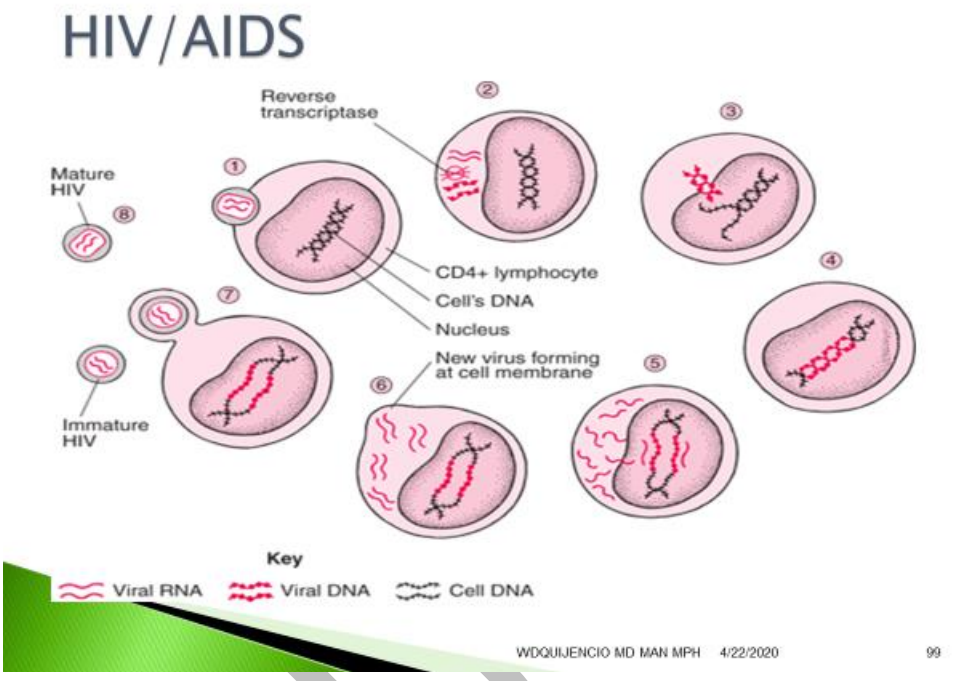
- Respiratory depression
- Death

NURSING INTERVENTIONS:

- Helping the woman stop using the substance
- Assist the woman have a good nutritional state
- Decrease the effects on the fetus
- Promote the establishment of the relationship with the infant

IX. HIV

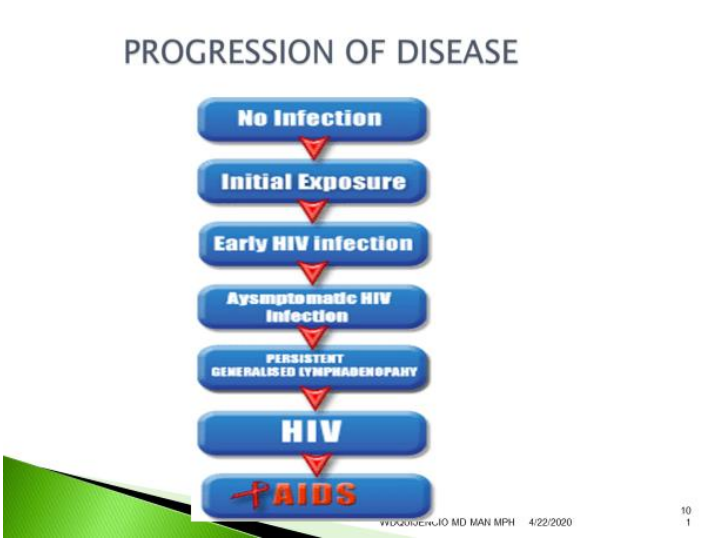
- Human Immunodeficiency Virus - is a virus that attacks the immune system
- HIV invades and destroys certain white blood cells called CD4+ cells
- The last stage of HIV infection is AIDS



MODES OF TRANSMISSION:

HIV is spread when Exposure to blood-borne pathogen

- Semen
- vaginal fluids
- sexual contact
- sharing needles
- Exposure to Body Fluids
- Perinatal transmission



WHO disease staging system for HIV (Sept 2005)

- *Stage I:* HIV disease is asymptomatic and not categorized as AIDS
- *Stage II:* includes minor mucocutaneous manifestations and recurrent upper respiratory tract infections
- *Stage III:* includes unexplained chronic diarrhea for longer than a month, severe bacterial infections and pulmonary tuberculosis
- *Stage IV:* includes toxoplasmosis of the brain, candidiasis of the esophagus, trachea, bronchi or lungs and Kaposi's sarcoma; these diseases are indicators of AIDS

EARLY SYMPTOMS OF HIV

- Fever
- Headache
- Tiredness
- Enlarged lymph nodes

LATE SYMPTOMS OF HIV

- Lack of energy
- Frequent fevers and sweats
- Persistent or frequent yeast infections (oral or vaginal)
- Persistent skin rashes or flaky skin
- Pelvic inflammatory disease in women that does not respond to treatment
- Short-term memory loss
- Weight loss

ELISA- ENZYME LINK IMMUNOSORBENT ASSAY

The first step of an HIV test. This test detects the presence of HIV antibodies in the blood.

WESTERN BLOT

This test is used to confirm the positive Elisa test results. The Western Blot test detects specific protein bands that are present in an HIV infected individual. Western Blot is 99.9 percent accurate in detecting that HIV infection has occurred.

RADIO IMMUNO PRECIPITATION ASSAY

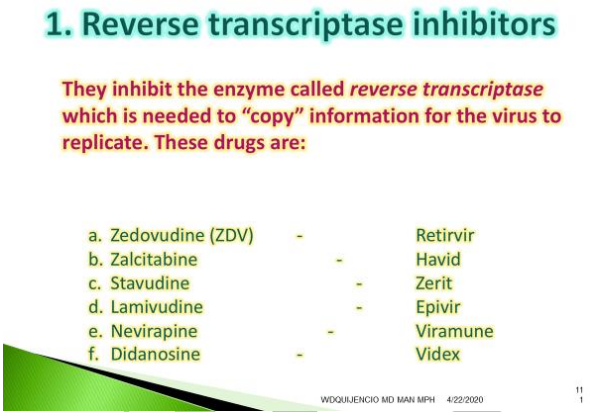
A confirmatory blood test that is used when HIV antibody levels are very low or difficult to detect. It can also be used when Western blot test results are uncertain (Indeterminant).

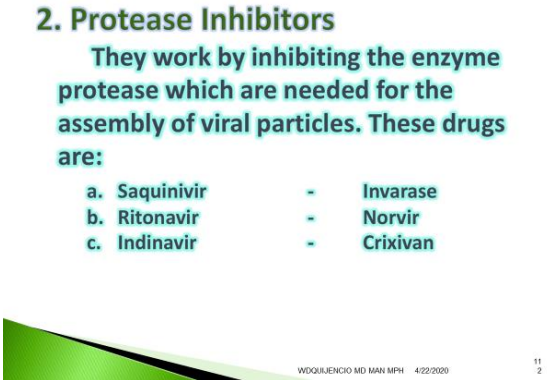
HIV PCR TEST

The HIV PCR test detects specific Deoxyribonucleic Acid (DNA) and Ribonucleic Acid (RNA) sequences that indicate the presence of HIV in the genetic structure of anyone HIV infected.

TREATMENT:

- Use of highly active antiretroviral therapy, or HAART.
- Combinations (or "cocktails") consisting of at least three drugs belonging to at least two types, or "classes," of anti-retroviral agents.
- Typical regimens consist of two nucleoside analogue reverse transcriptase inhibitors (NARTIs or NRTIs) plus either a protease inhibitor or a non-nucleoside reverse transcriptase inhibitor (NNRTI).





THE 4 C'S IN THE MANAGEMENT OF AIDS:

1. COMPLIANCE- giving of information and counselling the client which results to client's successful treatment, prevention and recommendation>

2. COUNSELLING AND EDUCATION-

✓Giving instruction about the treatment
✓Disseminating information about the disease
✓Providing guidance on how to avoid contracting STD again
✓Sharing facts about HIV and AIDS

3. CONTRACT TRACING- tracing out and providing treatments to partners

4. CONDOMS- promoting the use of condom, giving instructions about its use, and giving away available condoms.

ABC'S APPROACH TO LOWER THE RISK IN ACQUIRING AIDS DURING SEX

- **A**bstain from sexual intercourse—vaginal, oral, or anal
- **B**e in a monogamous relationship with an uninfected partner
- **C**ondom use
- Avoid **D**rug use
- **E**ducate partners

LABOR COMPLICATIONS

DYSTOCIA

- Or difficult labor is characterized by abnormally slow progress of labor
- Most common contemporary indication for primary cesarean section

DYSTOCIA

- Abnormalities of the passenger
- Abnormalities of maternal bony pelvis
- Abnormalities of powers / expulsive forces
- Abnormalities of the birth canal other than bony pelvis

LABOR

- Series of events by which uterine contractions and abdominal pressure expel the fetus and placenta from the woman's body

- Diagnosis of labor
  - regular painful uterine contraction accompanied by any of the following:
    - ruptured membrane
    - bloody show
    - complete cervical dilatation and effacement

DELIVERY

- Actual event of birth

DYSTOCIA DUE TO ABNORMALITIES OF THE PASSENGER

- Abnormalities of Presentation and Position
  - Occiput Posterior Position
  - Breech Presentation
  - Face Presentation
  - Brow Presentation
- Macrosomia
- Conjoined Twins
- Multiple Pregnancy

PASSENGER

- **Position:** relationship of reference point on fetal presenting part to maternal bony pelvis
  - O occiput in vertex presentation.
  - M (mentum or chin) in face presentation
  - S (sacrum) in breech presentation
  - A (acromion) in shoulder presentation.
  - **Maternal bony pelvis** divided into four quadrants *(right and left anterior; right and left posterior).* ***Most common positions are:***
    - ROA
    - LOA
    - ROP
    - ROA
    - LOA/ROA – the most common position favorable for delivery
    - LOP/ROP – usually causes back pain during labor; may slow the progress of labor; usually rotates before delivery to anterior position; rotation may be done by physician

Methods: used to establish fetal presentation and position are:

- Combined abdominal inspection and palpation (Leopold's maneuver)
- Vaginal examination
- Auscultation of fetal heart tones
- Sonography
- X-ray

- **Presentation** is defined as the lowermost part the fetus which presents to the pelvis / lower uterine segment
  - Determined by vaginal examination during labor
  - Vertex is the normal presentation (95%)
- Types of Presentation
  1. Cephalic
     a. Vertex / Occiput
     b. Brow

c. Sinciput
d. Face

2. Breech
    a. Frank
    b. Complete
    c. Incomplete
3. Shoulder
4. Compound

MALPRESENTATION

- Is presentation other than the vertex presentation
    - Breech 3%
    - Face 0.2%
    - Brow 0.01%
    - Shoulder 1:300
    - Compound 1:1000

Breech: buttocks or lower extremities present first.

- **Frank:** thighs flexed, legs extended on anterior body surface, buttocks presenting
- **Full or complete:** thighs and legs flexed, buttocks and feet (baby is squatting position)
- **Footling:** one or both feet are presenting

- Predisposing factors
    - Placenta previa
    - Multiple pregnancy
    - Uterine anomalies
    - Polyhydramnios/Oligohydramnios
    - Multiparity
    - Abnormal motor ability / diminished tone
    - Uterine relaxation
- TYPES OF BREECH DELIVERIES
    - Spontaneous breech
    - Assisted breech
    - Delivers to the umbilicus spontaneously
    - Total Breech extraction

Spontaneous breech delivery:

- No traction or manipulation of the infant is used.
- This occurs predominantly in very preterm deliveries.

Assisted breech delivery:

- Most common type of vaginal breech delivery.
- Spontaneously deliver up to the umbilicus
- Maneuvers are initiated to assist in the delivery of the remainder of the body, arms, and head. Spontaneous delivery to the umbilicus
- If legs do not deliver spontaneously can be assisted by Pinard maneuver
- Lovset maneuver – deliver the arms
- Mauriceau Smellie Viet – deliver the head

- Forceps extraction to deliver the head

Total breech extraction:

- Fetal feet are grasped, and the entire fetus is extracted
- Noncephalic second twin
- Total breech extraction for the singleton breech is associated with a birth injury rate of 25% and a mortality rate of approximately 10%.

FACE

- Condition of maximal deflexion / extension
- Predisposing factors include
    - Conditions which favor extension and reduce flexion of the vertex
    - Multiparity
    - Prematurity
    - CPD
- Submentobregmatic diameter presented to pelvis (9.5cm)
- Diagnosed in labor by palpation of the eyes, nose, mouth
- Classified According to the position of the chin (mentum)
- Can deliver vaginally if mento-anterior (occiput fits into the hollow of the sacrum allowing delivery of the chin under the symphysis)
- 1/3 of face presentations begin as M-P and 2/3 of these will rotate to M-A
- Management
    - Re-evaluate and make preliminary choice re delivery
    - Vaginal delivery appropriate where labor progressing satisfactorily, average size baby and adequately sized pelvis
    - Rotation to M-A may occur late in the second stage
    - Maneuvers to manually flex the face to facilitate delivery abandoned in modern obstetric practice
    - Forcep rotations C/I
    - Outlet forceps for M-A positions acceptable
    - C/S for persistent non M-A positions

BROW

- Moderate degree of deflexion
- Mento-occipital diameter presented to the pelvis (12.5cm)
- Predisposing factors include
    - Conditions which favor extension and reduce flexion of the vertex
    - Multiparity
    - Prematurity
    - CPD
- May be a transient feature of labor
- 2/3 of cases are unstable and convert
- Diagnosis
    - Palpation of nose, eyes, orbital ridges
- Management
    - Re-evaluate
    - Manual flexion and rotation to OA sometimes possible
    - C/S for persistent brow

SHOULDER PRESENTATION

- The long axis of the fetus is perpendicular to that of the mother
- The shoulder is usually over the pelvic inlet, with the head lying in one iliac fossa and the breech in the other
- Predisposing factors
    - Placenta previa
    - Multiple pregnancy
    - Uterine anomalies
    - Prematurity
    - Polyhydramnios
    - Multiparity
- Management
    - If > 37 weeks without C/I consider ECV
    - If in labor or C/I to ECV exists deliver by C/S
    - Type of uterine incision needs to be considered – classical, low transverse with the primary purpose to avoid fetal trauma and asphyxia

COMPOUND

- Implies that another anatomic part, usually an extremity has entered the pelvis along the with principal vertex or breech presentation
- Predisposing conditions include
    - Prematurity
    - Abnormal lies
    - Fetal anomalies
    - Large pelvic capacities
- Management
    - Labor usually progresses normally
    - Problem usually solved with the head being forced past the extremity
    - Cord prolapse a possible complication
    - May encourage the fetus to remove the extremity
    - Consider C/S for usual causes or arrest of labor
    - Edema / discoloration of the extremity quickly resolve

MULTIPLE PREGNANCY

- When more than one fetus simultaneously develops in the uterus
- Simultaneous development of two fetuses (twins) is the commonest
- Although rare: three fetuses (triplets), four fetuses (quadruplets), five fetuses (quintuplets), six fetuses (sextuplets)

Twin Pregnancy

- VARIETIES:
    - Dizygotic twins: is the commonest (two-third); results from the fertilization of two ova.
        - Fraternal / Biovular
    - Monozygotic twins (one-third) results from the fertilization of single ovum
        - Identical / Uniovular
    - Diamniotic dichorionic
        - 72 hours after fertilization
        - Two separate placenta, chorions and amnions

- Diamniotic monochorionic
    - 4 – 8 day after inner cell mass when chorion had developed
- Monoamniotic monochorionic
    - After 8th day of fertilization when amniotic cavity is formed

➢ ETIOLOGY:
- Maternal age
- Race and heredity : Black race
- Parity: Increasing parity (2.7% in 4th pregnancy)
- Heredity
- Pituitary Gonadotropin
- ART (Assisted Reproductive Technology)
- Ovulation induction with FSH and gonadotropin /chlomiphine
- Greater the number of embryos transferred, the greater the risk of multiple pregnancy

Conjoined Twins

➢ Division occurs after 2 weeks of the development of embryonic disc
➢ Siamese twins
➢ Four types of fusion may occur
- Thoracopagus (commonest)
- Pyopagus (Posterior fusion)
- Craniopagus (cephalic)
- Ischiopagus (caudal)

➢ **Maternal Complications**
- During pregnancy
    - Nausea and vomiting
    - Anemia
    - Pre-eclampsia (25%)
    - Hydramnios (10%)
    - Antepartum hemorrhage
    - Malpresentation
    - Preterm labor (50%)
    - Mechanical distress
- During labor
    - Early rupture of membranes and
    - Cord prolapse
    - Prolonged labor
    - Increased operative interference
    - Bleeding
    - Postpartum hemorrhage
- During puerperium
    - Subinvolution
    - Infection
    - Lactation failure

➢ **Fetal Complications**
- Miscarriage
- Prematurity (80%)
- Growth Problem (25%)

- Intrauterine death
- Asphyxia and still birth
- Fetal Anomalies

➢ **Labor and Delivery**
- Timing of delivery - the benefit of prolonging the pregnancy is outweighed the risk of still birth
- Uncomplicated dichorionic twins – managed expectantly and delivery can be
- around 38 weeks
- Uncomplicated monochorionic twins- delivery at around 37 weeks
- In cases of prematurity and discordant fetal well-being exists, timing of delivery should be based on parameters of healthy twin.
- In case of discordant fetal well-being or an anomaly, timing of delivery should be based on the condition of compromise fetus.

➢ **Method of Delivery**
- Cephalic - cephalic presentation - vaginal delivery
- Cephalic - non cephalic presentation - controversial
- Vaginal delivery of second non cephalic twins whose birthweight <1500gm is safe
- 2nd twin - breech extraction of non-cephalic twin or internal podalic version of an unengaged cephalic second twin followed by breech extraction
- CESAREAN SECTION
  - Breech presentation of the first twin - similar as singleton breech fetus
  - Locked twins - first fetus breech and second cephalic, breech of the first twin descends through the birth canal, the chin locks between the neck and chin of the second cephalic presenting co twin

DYSTOCIA DUE TO ABNORMALITIES OF THE PASSAGEWAY

PASSAGEWAY

➢ Refers to the route the fetus must travel from the uterus through the pelvis
  - Soft Tissues
    - Distensible lower uterine segment
    - Cervix
    - Vaginal canal
    - Pelvic floor muscle
    - Introitus
    - Before labor, uterine is made up of the corpus and the cervix.
  - Pelvic Bone – Types

➢ Important factors in the passageway
  - Type of pelvis
  - Structure of the pelvis (true versus false pelvis)
  - Pelvic inlet diameters
  - Ability of the uterine segment & vaginal canal to distend, the cervix to dilate

➢ <u>2 Divisions of the Pelvis</u>
  1. False Pelvis
  2. True Pelvis

a. Pelvic Inlet
b. Pelvic Cavity
c. Pelvic Outlet

- *Types of Pelvis*
  - Gynecoid – the true female pelvis
  - Platypelloid – wide but flat, kidney-shaped brim.
  - Anthropoid – oval in shape. Transverse diameter is narrow, A-P is longer. Ape pelvis.
  - Android – heart shape, male pelvis.

- **Measurements**
  - Two pelvic measurements are important to determine the adequacy of the pelvic size
    - Diagonal conjugate (AP diameter of the inlet)
    - Transverse diameter of the outlet
  - Pelvic Inlet Measurements:
    1. *Diagonal conjugate* (12.5 – 13 cm.)
    2. *Obstetric conjugate:* (estimated subtracting 1.5-2cm to diagonal conjugation)
    3. *True Conjugate* (10.5 – 11 cm.)
  - Diagonal conjugate: from lowest margin of the symphysis pubis to sacral promontory; Measurement: 12.5 – 13 cm
    - Obtained by vaginal examination
    - Metal scale fastened to wall for measuring the diagonal conjugate diameter as ascertained manually.
  - Obstetric conjugate
    - From inner surface of symphysis pubis, slightly below upper border, to sacral promontory
    - Shortest distance between sacral promontory and symphysis pubis
    - Most important pelvic measurement
    - Subtracting 1.5 – 2 cm from diagonal conjugate
  - True conjugate:
    - Conjugate vera
    - From upper margin of symphysis pubis to sacral promontory,
    - Measurement: 10.5 – 11 cm.
    - Maybe obtained by x-ray or ultrasound
  - Midpelvis Measurements - Interspinous diameter / Bispinous diameter
    - At the level of the ischial spine (midplane or a plane at least a pelvic dimension)
    - Importance: Engagement of the fetal head
    - The space between the inlet and the outlet
    - Extends from the lower margin of the symphysis pubis through the level of the ischial spines to the tip the sacrum
    - Measurement: 10.5 cm
    - The anteroposterior diameter through the level of ischial spines – 11.5 cm
    - Transverse or interspinous – 10.5 cm
    - Posterior sagittal – from the midpoint of the interspinous line to the same point in sacrum 5 cm
  - Pelvic Outlet Measurements:
    - AP diameter – extends from the lower margin of the symphysis pubis to the tip of the sacrum (11.5)

- Transverse diameter / Inter ischial tuberous diameter – distance between the inner edges of the ischial tuberosities (10 cm)
- Posterior sagittal diameter – extends from the tip of the sacrum to a right angled intersection with a line between the ischial tuberosities (7.5)
- Inferior portion of the pelvis, or that portion bounded in the back by coccyx, on the sides by the ischial tuberosities and in the front by the inferior aspect of the symphysis pubis
- The greatest diameter of the outlet is its anterposterior diameter

➢ **Engagement:** fetal presenting part enters true pelvis (inlet). May occur two weeks before labor in Primipara; usually occurs at beginning of labor for Multipara.

➢ **Station:** measurement of how far the presenting part has descended into the pelvis. Referent is **ischial spines**, palpated through lateral vaginal walls. When presenting part is:
  - **at ischial spines,** station is **"0"**
  - **above ischial spines,** station is **negative number**
  - **below ischial spines,** station is **positive number**
  - **"High" or "floating"** terms used to denote unengaged presenting part.

DIAMETERS OF THE FETAL SKULL
2 TRANSVERSE DIAMETERS
1. Biparietal diameter – 9.5 cm between 2 parietal eminences
2. Bitemporal diameter – 8.2 cm between the furthest points of the coronal suture of the temples

AP or LONGITUDINAL DIAMETERS
1. Suboccipitobregmatic – 9.5 cm from inferior aspect of the occiput to the center of the anterior fontanelle
2. Suboccipitofrontal – 10 cm – from below the occipital protruberance to the center of the frontal suture
3. Occipitofrontal – 11.5 cm – bridge of the nose to the occipital prominence
4. Mentovertical or occipitomental – 13.5 – measured from the chin to the posterior fontanelle. The widest AP diameter
5. Submentovertical – 11.5 cm – from the point where the chin joins the neck to the highest point on the vertex
6. Submentobregmatic – 9.5 cm – from the point where the chin joins the neck to the center of the bregma

CONTRACTED PELVIS
➢ Anatomically
  - a **contracted pelvis** is defined as one in which the essential diameters of one or more planes are shortened by at least 0.5 cm.
➢ Obstetrically
  - Any alteration of size and shape of the pelvis
  - Abnormal bony pelvis secondary to
    - Malnutrition
    - Kyphosis
    - Scoliosis
    - Trauma
  - Past history of childhood tuberculosis, rickets or poliomyelitis
  - Past obstetrical history for prolonged labor and instrumental delivery

- In primigravid women, engagement is to occur by the 37th week. Non-engagement or malpresentation should warrant a suspicious pelvic contraction

- Clinical Pelvimetry
  - Clinical pelvimetry Determination of the adequacy of the inlet reaching the promontory of the sacrum
- Assessment of the pelvis:
  1. Reaching the sacral promontory
  2. Feeling the lateral pelvic wall
  3. Determining the prominence of the ischial spines
  4. Assessment of the pubic arch

DISPROPORTION

- Is a state wherein there is a discrepancy, between the size of the fetus and that of the pelvis.
- Due to an average-sized baby in a woman with a small pelvis or a normal pelvis with a big baby or due to a combination of these factors.
- Muller Hellis Method
  - Maternal examination done at the same time
  - Internal examining fingers note the degree of descent while the thumb is placed over the symphysis pubis to note the degree of overlapping
  - Lack of descent and overlapping of the head and the symphysis points to severe disproportion.

Pelvic Inlet Contraction

- Anteroposterior diameter is less than 10 cms.
- Greatest transverse diameter is less than 12 cms.
- DIAGONAL CONJUGATE < 11.5 cm.
- Ominous signs to watch for include:
  1. Dysfunctional labor
  2. Posterior parietal presentation with exaggerated obliquity
  3. Early rupture of membranes
  4. Increasing of edema of the cervix
  5. Formation of caput and molding
  6. Conversion from vertex to face presentation
  7. Evidence of fetal or maternal distress.

Midpelvic Contraction

- The sum of the interspinous diameter (10.5 cm) and the postero sagittal diameter of the midpelvis (5 cm) falls to 13.5 cm and below
- Inter spinous diameter is less than 10 cms.
- When smaller than 8 cms then definite contraction exists!
- Ischial spines are prominent
- Sidewalls are convergent
- Sacrosciatic notch is narrow
- Midpelvic contraction is said to be more common that inlet contraction with frequently associated deep transverse arrest of the fetal head.
- The management of midpelvic contraction is to allow for the normal forces of labor to push the biparietal diameter of the head beyond the area of narrowing.
- The use of oxytocin is contraindicated.

Contracted Pelvic Outlet

- Interischial tuberous diameter of less than 8 cms.
- Usually associated with midpelvic contraction and it is the combination of the two
- Produces perineal tears

Generally Contracted Pelvis

- All the different planes are shortened.
- Molding and internal rotation results in arrests in occipito posterior position due to associated mid pelvic contraction.
- Termination by cesarean section is usually done.

SOFT TISSUE DYSTOCIA

- Anatomic abnormalities of the reproductive tract may cause abnormal or prolonged labor.
- It may be due to abnormalities in the uterus, cervix and the vagina; the presence of pelvic masses; scarring of the birth canal and low implantation of the placenta.
- **Uterine Abnormalities**
    - Abnormal fusion of the Mullerian ducts
    - Failure of absorption of the septum lead to a variety of congenital malformations of the uterus.
    - SUSPECT if:
        - Broadening of the uterine fundus
        - Abnormal lie or presentation
        - History of repeated abortions
        - Abnormal location of the cervix in the vaginal vault.
- **Cervical Abnormalities**
    - Following extensive cauterization of the cervix, it may become so stenosed that dilatation and effacement may not take place during labor.
    - In cases of unyielded cervical stenosis, cesarean section is carried out.
- **Vaginal Abnormalities**
    - Septum can be present that divides that vagina.
    - Longitudinal septum – cervix to vulva
    - Incomplete septum – upper or lower portion of vagina
    - Transverse septum – upper vagina divided from lower part
- **Pelvic Masses**
    - Gartner Duct cyst may protrude into the vagina and through the introitus.
    - Uterine myomas
    - Ovarian neoplasm
- **Low lying placenta**
    - Marginal or low lying placenta may prevent fetal descent, or worst may give rise to abnormal bleeding that cesarean section may be required.

DYSTOCIA DUE TO ABNORMALITIES OF THE POWER / EXPULSIVE FORCES

Powers- forces of labor, acting, in concert, to expel fetus and placenta Major Forces:

A. Primary power
- Uterine contractions (involuntary)
  - Frequency
  - Intensity
    1. Mild
    2. Moderate
    3. Strong
  - Duration
  - Interval
- Phases of Contraction
    1. Increment
    2. Acme
    3. Decrement

B. Secondary power
- Voluntary bearing down efforts
  - False labor
  - True labor

Stages of Labor and Delivery

❖Stage 1 – from onset of labor until full dilatation

➢Latent phase
➢Active phase
➢Transitional phase

❖Stage 2 – from full dilatation of cervix to birth of baby

❖Stage 3 – from birth of baby to expulsion of placenta

❖Stage 4 – time after birth (usually 1-2 hrs) of immediate recovery

Duration of labor: Primipara

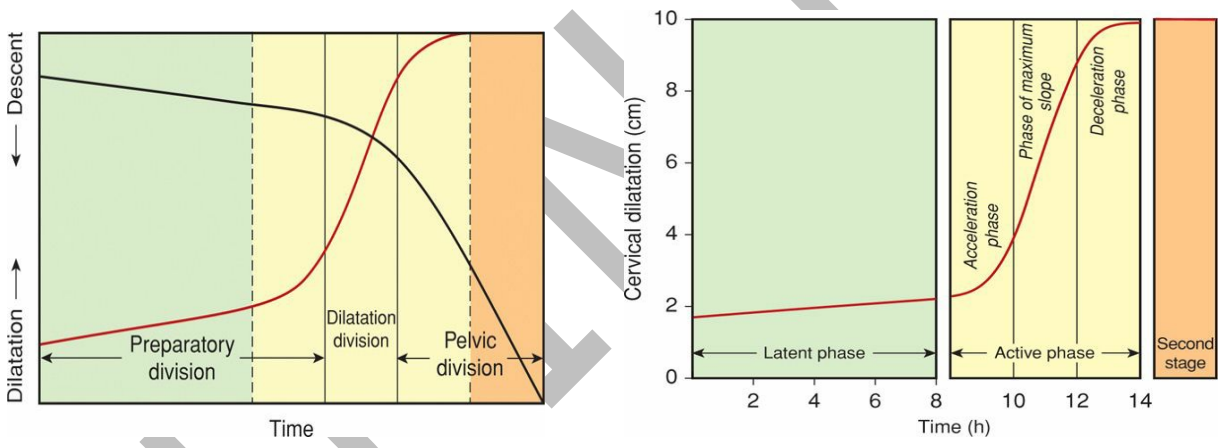
First stage – 12 1⁄2 hours
Second stage- 80 minutes
Third stage- 10 minutes

Mechanisms of labor

1. Engagement
2. Descent
3. Flexion
4. Internal rotation
5. Extension
6. External rotation
7. Expulsion

Functional Divisions of Labor

- Preparatory division - includes the latent and acceleration phases.
- Dilatational division - during which time dilatation proceeds at a rapid rate, occupies the phase of maximum slope of dilatation. This is unaffected by sedation or conduction analgesia.
- Pelvic division - encompasses both deceleration phase and the second stage of labor, concurrent with the maximum slope of descent.



PHASES OF THE ACTIVE PHASE

- The **acceleration phase** is short and variable but is important in determining the ultimate outcome of labor. A low acceleration phase generally presages a lower maximum slope and therefore prolonged total labor.
- The **phase of maximum slope** is a good measure of the overall efficiency of the uterus. It gives a clear idea of the effectiveness of the force of uterine contraction in producing dilatation.
- The **deceleration phase** reflects fetopelvic relationships. This involves retraction of the cervix about the fetal presenting part.

Friedman's minimum criteria for subsequent entry into the active phase of labor are cervical dilatation rates of 1.2 cm per hour for nulliparas and 1.5 cm per hour for multiparas. These rates of dilatation do not start at a specific dilatation.

ABNORMAL LABOR PATTERNS:

Alteration in the Patterns of Labor

Altered Labor Pattern	Nullipara	Multipara
Prolongation Disorder Prolonged Latent Phase	> 20 hours	> 14 hours
Protraction Disorder Protracted active phase Dilatation Descent	 < 1.2 cm / hour < 1 cm / hour	 < 1.5 cm / hour < 2 cm / hour
Arrest Disorders Prolonged Deceleration Phase Secondary Arrest of dilatation Arrest of Descent Failure of Descent	 > 3 hours > 2 hours > 1 hour No descent in deceleration phase or second stage of labor	 > 1 hour > 2 hours > 1 hour

1. Prolonged latent phase - longer than 20 hours for nulliparous or 14 hours multiparous.

Etiologic factors:
a. excessive sedation
b. unfavorable cervix
c. false labor
d. uterine dysfunction

2. Protraction disorders -
a. protracted active phase dilatation - maximum slope less than 1.2cm(nulliparous) or 1.5 (multiparous).
b. protracted descent- descent of the head less than 1cm per hour (nulliparous) or 2cm (multiparous).

3. Secondary arrest of dilatation

4. Arrest of descent

5. Failure of descent

FORCES OF LABOR

❖Ineffective uterine force

- Hypertonic uterine dysfunction
- Hypotonic uterine dysfunction

- Uncoordinated contractions

Comparison of Hypotonic and Hypertonic Contractions

Criteria	Hypertonic	Hypotonic
Phase of labor	Latent	Active
Symptoms	Painful	Painless
Medication		
Oxytocin	Unfavorable reaction	Favorable reaction
Sedation	Helpful	Little value

PREVENTION OF DYSFUNCTIONAL LABOR:

➢No cephalopelvic disproportion
➢Maintain a serum glucose level
➢Reduce psychological stress
➢Provide measures to reduce pain
➢Maintain a side lying position
➢Keeping the bladder empty

LABOR COMPLICATIONS

1. ***Uterine Inertia***
   - Sluggishness of contractions
   - **Cause:**
     - Inappropriate use of analgesics
     - Pelvic bone contraction
     - Poor fetal position
     - Overdistention – due to multiparity, multiple pregnancy, polyhydramnios or excessively large baby
   - Management: Stimulation of labor by oxytocin administration or amniotomy

2. ***Precipitate Delivery***
   - labor and delivery that is completed in < 3 hours due to multiparity or following oxytocin administration or amniotomy
   - Effects:
     - Extensive lacerations
     - Abruptio placenta
     - Hemorrhage due to sudden release of pressure→ shock

3. *Induced Labor*

- Stages of labor and birth occurs due to chemical or mechanical means which is usually performed to save the mother or fetus from complications which may cause death
- **Indications:**
  - Maternal – toxemia
  - Placental accidents
  - Premature Rupture of Membrane
  - Fetal: DM – terminated at about 37 wks AOG if indicated
  - Blood incompatibility
  - Excessive size
  - Postmaturity
- **Prerequisites to Induce Labor:**
  - No Cephalo - Pelvic Dislocation
  - Fetus is already viable >32 weeks AOG
  - Single fetus in longitudinal lie and is engaged
  - Ripe cervix – fully or partially effaced; Cervical Dilatation at least 1 – 2 cm
- **Procedure for Induced labor:**
  - Oxytocin Administration: 10 IU of Pitocin in 1000 ml of D5W at a slow rate of 8 gtts/min given initially → no fetal distress in 30 minutes → rate 16 -20 gts/min
  - Amniotomy – done with Cervical Dilatation = 4 cm; Check FHR and quality of amniotic fluid
- **Nursing Considerations:**
  - Monitor uterine contractions → potential for rupture
  - Monitor flow rate regularly
  - Turn off IV with any abnormality in FHR or contractions
  - Watch out for complications
  - Prostaglandin administration: Route: oral or IV (never IM causes irritation); effect is slower than oxytocin

4. Instrumental Deliveries

<u>A. Forceps Delivery</u>

- Use of metal instruments to extract the fetus from the birth canal, when at +3 / +4 and sagittal suture line is in an AP position in relation to the outlet (e.g. Simpson, Elliot, Piper for breech presentation)
- **Purposes:**
  - shorten second stage of labor because of fetal distress; maternal exhaustion; maternal disease – cardiac, pulmonary complication
  - ineffective pushing due to anesthesia
  - prevent excessive pounding of fetal head against perineum (low forceps for premature)
  - poor uterine contraction or rigid perineum
- **Prerequisites:**
  - Pelvis adequate, no disproportion
  - Fetal head is deeply engaged
  - Cervix is completely dilated and effaced
  - Membranes have ruptured
  - Vertical presentation has been established
  - The rectum and bladder are empty
  - Anesthesia is given for sufficient perineal relaxation and to prevent pain

- **Types: Low or Mid Forceps Delivery**
- **Complications:**
    - Forceps marks – noticeable only for 24 – 48 hrs
    - Bladder or rectal injury
    - Facial paralysis
    - Ptosis
    - Seizures
    - Epilepsy
    - Cerebral Palsy
- **Risks:**
    - Maternal Risks
        - Perineal Injury (extension of episiotomy)
        - Vaginal and Cervical lacerations
        - Postpartum hemorrhage
    - Fetal Risks
        - Intracranial hemorrhage
        - Cephalhematoma
        - Facial / Brachial palsy
        - Injury to the soft tissues of face & forehead
        - Skull fracture

B. Cesarean Section **–** birth through a surgical incision on the abdomen

- **Indications:**
    - Cephalo-pelvic disproportion (CPD)
    - Severe Toxemia
    - Placental Accidents
    - Fetal Distress
    - Previous classic CS – done prior to onset of labor pains; scheduled birth
- **Types:**

1. *Low Segment* – the method of choice.

- **Advantages:**
    - Minimal blood loss
    - Incision is easier to repair
    - Lower incidence of postpartum infection
    - No possibility of uterine rupture

2. *Lower vertical incision* – recommended in:

- Bladder or lower uterine segment
- Adhesions from Previous operations
- Anterior Placenta Previa
- Transverse lie

- **Preoperative Care**
    - Check vital signs, uterine contractions, and FHR
    - Physical examination; routine laboratory tests; blood typing and cross matching
    - Abdomen is shaved from the level of the xiphoid process below the nipple line, extending out to the flanks on both sides up to the upper thirds of the thighs
    - Retention catheter is inserted to constant drainage to keep the bladder away from the operative site

- Preoperative medication is usually only atropine sulfate.
- No narcotics are given → causes respiratory depression in the NB

- **Postoperative Care**
  - Deep breathing, coughing exercises, turning from side to side
  - Ambulate after 12 hours
  - Monitor vital signs
  - Watch for signs of hemorrhage – inspect lochia; feel fundus (if boggy, massage with proper abdominal splinting and give analgesics as ordered)
  - Breastfeeding should be started 24 hrs after delivery
  - Most common complication: Pelvic thrombosis

5. Amniotic fluid embolism

- Amniotic fluid is forced into an open maternal uterine flood sinus through some defect in the membranes or after partial premature separation of the placenta. Solid particles in the amniotic fluid enter maternal circulation and reach the lungs as emboli
- **Signs and symptoms:**
  - Dramatic
  - Sudden inability to breathe, sits up, grasps chest and sharp chest pain
  - Turns pale then → bluish gray color
  - Death may occur in a few minutes
  - Amniotic fluid embolism
- **Management:**
  - Emergency measures to maintain life: IV, oxygen, CPR
  - Provide intensive care in the ICU
  - Keep family informed
  - Provide emotional support

6. Premature Labor and Delivery

- Uterine contractions occur before 37th week of gestation
- **Cause:**
  - Pre-eclampsia
  - Placenta Previa
  - Age: Adolescent or 40 yrs old above primigravids
- **Management:**
- If no bleeding; no CD, Good FHT, medication is given
  - Ethyl alcohol (Ethanol) IV – blocks release of Oxytocin
  - Vasodilan IV – vasodilator
  - Ritodrine – muscle relaxant per orem
  - Bricanyl – bronchodilator
- Pain meds are kept to a minimum to prevent respiratory depression
- Steroids (glucocorticoids) for maturation of fetal lung → surfactant production
- Anesthesia preferred – caudal, spinal or infiltration – do not affect the infant

7. Shoulder Dystocia

- Inability to deliver a baby's shoulders after its head has emerged. In such cases, the baby's shoulder has become impacted behind the mother's pubic symphysis

- One that requires additional obstetrical maneuvers following the failure of gentle downward traction on the fetal head to effect delivery of the shoulders. - ACOG
- RISKS
  - Macrosomia
  - Gestational diabetes
  - Previous shoulder dystocia
  - Instrumental vaginal delivery
- MANAGEMENT
  - Heightened awareness that a shoulder dystocia might occur in a particular case
  - Diagnosis
  - Operational control / situational awareness
  - Maneuvers
    - McRoberts maneuver
    - Suprapubic pressure
    - Woods maneuver
    - Rubin's maneuver
  - Cleidotomy – fracturing the fetal clavicle.
  - Symphysiotomy – cutting the pubic symphysis.
  - Zavanelli – returning the fetal head to the pelvis for delivery of the baby via caesarean section.

8. Cord Prolapse

- In a **prolapse**, the umbilical **cord** drops (prolapses) through the open cervix into the vagina ahead of the baby.
- The **cord** can then become trapped against the baby's body during delivery.
- CAUSES
  - Malpresentation
  - Prematurity
  - Polyhydramnios
  - Multiple pregnancy
  - PROM
  - CPD
  - Obstetric interventions
- DIAGNOSIS
  - Cord pulsations
  - CTG shows variable decelerations
  - Fundal pressure causes bradycardia
  - Meconium stained liquor
- MANAGEMENT
  - Lift presenting part off the cord
  - Instruct patient NOT to push
  - Position
    - Knee chest
    - Trendelenburg
    - Exaggerated position
  - Vulvar pad
  - Replacement of cord
  - Tocolysis
  - Funic reduction

- Manual replacement of cord into uterus
- Cord gently pushed above presenting part
- Expedite delivery
- Prepare for newborn resuscitation

9. PROM

- Premature rupture of membranes (PROM)
  - Spontaneous rupture of fetal membranes before onset of labor
- Preterm premature rupture of membrane
  - Rupture of membranes before onset of labor in pregnancies between 28 – 37 weeks
- Term premature rupture of membrane
  - Rupture of membranes before onset of labor beyond 37 weeks
- CAUSES
  - Cause: unknown but hypothesized:
    - Vaginal and cervical infections
    - Incompetent cervix
    - Nutritional deficiencies
    - Polyhydramnios
    - Fetal malpresentation
    - Multiple gestation or a large baby
    - Occupational fatigue
    - Vaginal exams
- RISKS
  - Preterm labor
  - Umbilical cord prolapse
  - Umbilical cord compression
  - Chorioamnionitis
  - Pulmonary hypoplasia
  - Placental abruption
  - Neonatal infection
  - Stillbirth/neonatal death
- SIGNS AND SYMPTOMS
  - Vaginal discharge
    - Gush of fluid
    - Leaking of fluid
  - Cramping
  - Contractions
  - Back pain

10. Uterine Rupture

- occurs when the uterus undergoes more straining than it is capable of sustaining
- Cause:
  - Scar from previous CS
  - Unwise use of oxytocin
  - Overdistention
  - Faulty presentation
  - Prolonged labor

- **Signs & Symptoms:**
  - Sudden severe pain
  - Hemorrhage and clinical signs of shock
  - Change in abdominal contour (two swelling on the abdomen due to retracted uterus and the extrauterine fetus)
- **Management: Hysterectomy**

POSTPARTUM COMPLICATIONS

POST PARTUM HEMORRHAGE

- ☐ Primary Post-Partum Hemorrhage (early) - blood loss from the birth canal of 500 ml or more within 2 hours of delivery.
- ☐ Secondary Post-Partum Hemorrhage (late) - abnormal bleeding after 24 hours

- ☐ Predisposing factors
  - ◘ Overdistension of the uterus
    - ☐ Multiparity
    - ☐ Large babies
    - ☐ Polyhydramnios
    - ☐ Multiple pregnancies
  - ◘ Cesarean Section
  - ◘ Prolonged and difficult labor
  - ◘ Placental accidents (previa or abruptio)

- ☐ Causes of Post-Partum Hemorrhage
  - ◘ Partial separation of placenta
  - ◘ Uterus is prevented from contracting
  - ◘ Uterus fails to contract
  - ◘ Trauma to uterus, cervix, vagina, episiotomy
  - ◘ Retention of placental fragments

- ☐ CONSEQUENCES OF PPH
  - ◘ Circulatory collapse leading to shock and death
  - ◘ Puerperal anemia and morbidity
  - ◘ Damage to the pituitary blood supply Sheehan's syndrome
  - ◘ Fear of further pregnancies

- ☐ NURSING MANAGEMENT
  - ◘ Assist with appropriate treatment
  - ◘ Prevent excessive blood loss and resulting complications
  - ◘ Provide physical and emotional support
  - ◘ Provide client and family education

PRIMARY POST PARTUM HEMORRHAGE

- **CAUSES:**
  - Uterine Atony – uterus is not well contracted, relaxed or boggy (most frequent cause)
  - Lacerations
  - Hypofibrinogenemia
  - Clotting defect

Nursing interventions

1. Identify client at risk for condition
2. Monitor fundus frequently if bleeding occurs; when stable, every 15 minutes for 1-2 hours at appropriate intervals.
3. Monitor maternal vital signs for indication of shock
4. Administer medications, IV fluids as ordered
5. Measure I&O
6. Remain with client for support and explanations of procedures
7. Keep client warm
8. Prepare for clients return to delivery room if needed for repair of laceration or removal of placental fragment
9. Monitor for signs of DIC

UTERINE ATONY

- The uterus, although empty, fails to contract and control bleeding from the placental site. The commonest and potentially most dangerous cause of postpartum hemorrhage
- Predisposing Causes of Uterine Atony
  - Excessive uterine distension
  - Multiparity
  - Prolonged labor
  - Labor augmented with Syntocinon.
  - General anesthesia
  - Placenta previa
  - Abruptio placentae - the 'Couvelaire' uterus may not contract
- Management
  - Massage –first nursing action
  - Ice compress
  - Oxytocin administration
  - Empty bladder
  - Bimanual compression to explore retained placental fragments
  - Hysterectomy (last alternative)

LACERATIONS

- Involves the cervix, vagina, or perineum
- Perineal tears may follow any vaginal delivery
- Persistent bleeding from a contracted firm uterus
- Incidence: Common in precipitate delivery, Large baby, Difficult delivery, Shoulder dystocia
- Treatment:
  - Repair

HEMATOMA

- ☐ Due to injury to blood vessels in the perineum during delivery
- ☐ Incidence: Common in precipitate delivery and those with perineal varicosities
- ☐ Treatment:
  - ◘ Ice Compress in first 24 hours
  - ◘ Oral Analgesics as prescribed
  - ◘ Site is incised and bleeding vessel ligated

UTERINE INVERSION

- ☐ Fundus is forced through the cervix so that the uterus is turned inside out
- ☐ Insertion of placenta at the fundus, so that as fetus is rapidly delivered, fundus is pulled down
- ☐ Strong fundal push, attempts to deliver the placenta before signs of separation
- ☐ Management: Hysterectomy

SECONDARY POST-PARTUM HEMORRHAGE

- ☐ CAUSE:
  - ◘ Retained Placental Fragments

- ☐ Management
  - ◘ Dilatation and curettage
  - ◘ Ultrasound scan to detect retained products.
  - ◘ Antibiotics (broad spectrum + anti-anaerobe e.g. Metronidazole).
  - ◘ Evacuation of uterus if products seen.

SUBINVOLUTION

- ☐ Delayed return of the enlarged uterus to normal size and function

- ☐ Causes:
  - ◘ Retained placenta
  - ◘ Endometritis
  - ◘ Uterine fibroids
  - ◘ Clinical Manifestations
- ☐ Prolonged lochial discharge
- ☐ Irregular or excessive bleeding
- ☐ Larger than normal uterus
- ☐ Boggy uterus

NURSING MANAGEMENT

- ☐ Assist with appropriate treatment
- ☐ Prevent excessive blood loss, infection, other complications
  - ◘ Massage uterus
  - ◘ Monitor BP and pulse rate
  - ◘ Administer medications
  - ◘ Prepare for possible D & C
- ☐ Assist the client and family deal with physical and emotional stress of postpartum complications
- ☐ Provide physical and emotional support
- ☐ Provide client and family education

PUERPERAL PYREXIA

- ☐ Temperature of *38°C* maintained for or recurring within 24 hours, within 21 days
- ☐ Requires a complete physical examination and examination of urine specimen, throat swab or sputum, high vaginal swab and in some cases blood culture.
- ☐ Causes of puerperal pyrexia

May be an infection:

- ☐ Genital tract - Perineum, Vagina, Cervix, Uterus, Adnexa. Breasts.
- ☐ Urinary system
- ☐ Superficial thrombophlebitis or deep vein thrombosis
- ☐ Respiratory system - Common cold, Influenza, After general anesthesia.
- ☐ Causes of puerperal pyrexia
  - ➢ Endometritis
    - ➢ Infection of endometrium
      - ➢ Assessment
      - ➢ Therapeutic management
  - ➢ Infection of perineum
  - ➢ Peritonitis
    - ➢ Infection of the peritoneal cavity
  - ➢ Inflammation of the lining of a blood vessel
  - ➢ Thrombophlebitis
    - ➢ Femoral thrombophlebitis
    - ➢ Pelvic thrombophlebitis

- ☐ Clinical Manifestations
  - ◘ Fever
  - ◘ Localized vaginal, vulvar, perineal infections
  - ◘ Manifestations of endometritis
  - ◘ Parametritis
  - ◘ Signs and symptoms of peritonitis

- ☐ NURSING MANAGEMENT
  - ◘ Promote resolution of the infectious process
  - ◘ Provide client and family teaching
  - ◘ Prevention
  - ◘ During pregnancy
    - ☐ Correct all anemia states
    - ☐ Avoid sexual intercourse
    - ☐ Douching during the last 2 months of pregnancy
  - ◘ Prevention
    - ☐ During labor
      - ☐ Strict aseptic technique – wearing of cap, mask, gown
      - ☐ Keep perineal and vaginal laceration in minimum
      - ☐ Avoid contact with person with URTI
      - ☐ Replace blood loss
    - ☐ During puerperium
      - ☐ Use of clean/sterile perineal pads always
      - ☐ Perineal flushing every after urination and bowel elimination

THROMBOPHLEBITIS

1. A condition in which there is both inflammation and a blood clot in a vein. Thrombophlebitis can occur in either superficial or deep veins.
2. May be seen in the veins of the legs or pelvis
3. May result from injuries, infection or the normal increase in circulating clotting factors in the pregnant and newly delivered woman

☐ ASSESSMENT FINDINGS

- ◘ Pain/discomfort in area of thrombus (legs, pelvis, abdomen)
- ◘ If in the leg, pain, redness, edema over affected area
- ◘ Elevated temperature and chills
- ◘ Peripheral pulses may be decreased
- ◘ Positive Homan's sign
- ◘ If in deep pain, leg may be cool and pale

☐ **Nursing interventions**

- ◘ Maintain bed rest with leg elevated on pillow. Never raise knee gatch on bed
- ◘ Apply moist heat as ordered
- ◘ Administer analgesic as ordered
- ◘ Provide bed cradle to keep sheets off leg.
- ◘ Administer anticoagulant therapy as ordered **(usually heparin)** and observe clients for signs of bleeding
- ◘ Apply elastic support hose if ordered, with daily inspection of legs with hose removed.
- ◘ Teach client not to massage legs
- ◘ Allow clients to express fears and reactions to conditions
- ◘ Observe client for signs of pulmonary embolism
- ◘ Continue to bring baby to mother for feeding and interactions
  - ❖ Heparin – Monitor PTT – Protamine sulfate
  - ❖ Coumadin – Monitor PT – Vitamin K

MASTITIS

General Information

1. Infection of the breast, usually unilateral
2. Frequently caused by cracked nipples in the nursing mother
3. Causative organism usually hemolytic S. Aureus
4. If untreated, may result in breast abscess

Assessment findings

1. Redness, tenderness or hardened are in the breast
2. Maternal chills, malaise
3. Elevated vital signs, especially temperature and pulse

Nursing interventions

1. Teach/ stress importance of hand washing to nursing mother and wash own hands before touching client's breast
2. Administer antibiotic as ordered
3. Apply ice if ordered between feedings
4. Empty breast regularly: baby may continue to nurse or have mother use hospital-grade pump

POST PARTUM MOOD DISORDERS

- ☐ Disorders recognized are:
  - ◘ Postpartum blues
  - ◘ Postpartum depression without psychotic features
  - ◘ Postpartum psychosis
- ☐ ETIOLOGY
  - ◘ History of puerperal psychosis, bipolar disorders, delirium, hallucination, rapid mood changes, confusion, suicide
  - ◘ Biologic theory – alteration in hypothalamic function and altered hormonal influence
  - ◘ Psychological theory
    - ☐ Poor support system
    - ☐ Psychologic stress
    - ☐ Poor relationship with partner
  - ◘ Sociocultural theories
    - ☐ Low levels of gratification, support and control both at work and parenting role

- ☐ CLINICAL MANIFESTATIONS
  - ◘ Postpartum blues
    - ☐ Fatigue
    - ☐ Weeping
    - ☐ Anxiety
    - ☐ Mood instability onset at 1 to 2 days postpartum lasting to 2 weeks or less
  - ◘ Postpartum depression without psychosis
    - ☐ Confusion
    - ☐ Fatigue
    - ☐ Agitation
    - ☐ Feeling of hopelessness
    - ☐ Alteration in mood
  - ◘ Postpartum psychosis
    - ☐ Delusion
    - ☐ Auditory hallucination
    - ☐ Hyperactivity

- ☐ NURSING MANAGEMENT
  - ◘ Identify postpartum mood disorder
  - ◘ Support and treat the client and family
  - ◘ Support efforts at parent-newborn bonding

INFERTILITY

Infertility – inability to conceive after at least 1 year of sexual intercourse at least four times per week without contraception

Primary infertility – no previous history of either partner conceiving or impregnating
Secondary infertility – inability to conceive after a previous successful pregnancy

FACTORS CONTRIBUTING TO INFERTILITY

Alterations in Sexual Function
Male Dysfunctions

1. **Erectile dysfunction/impotence**: inability to achieve or maintain an erection sufficient for sexual satisfaction for oneself or partner.
2. **Rapid ejaculation**: man is unable to delay ejaculation long enough to satisfy his partner.
3. **Retarded ejaculation**: inability to ejaculate into the vagina or delayed ejaculation. Male difficulty to reach orgasm.

Female Dysfunctions:

1. **Hypoactive sexual desire**: a persistent or recurring absence of sexual thoughts or disinterest in sexual activity.
2. **Sexual arousal disorder**: woman is unable to attain or maintain adequate vaginal lubrication/decreased clitoral or labial sensation.
3. **Orgasmic disorder**: difficulty/inability to achieve orgasm in spite of stimulation and arousal.

Sexual Pain Disorders

- **Dyspareunia:** during intercourse due to inadequate lubrication, infection or hormonal imbalance.
- **Vaginismus**: involuntary spasm of lower third of vagina which makes insertion of penis painful or impossible.
- **Genital pain:** pain with any type of sexual stimulation other than sexual intercourse

FACTORS CONTRIBUTING TO FEMALE INFERTILITY

VAGINAL PROBLEMS

- Vaginal infections
- Anatomic abnormalities
- Sexual dysfunction that prevents penetration by the penis
- Highly acidic vaginal environment which markedly decreases sperm survival

CERVICAL PROBLEMS

- Disruption of physiologic changes that occur during the preovulatory and ovulatory period
- Mechanical problems - cervical incompetence
- Diethylstilbestrol treated women

UTERINE PROBLEMS

- Functional - Unfavorable environment
- Structural - uterine myoma

TUBAL PROBLEMS

- PID
- Endometriosis

OVARIAN PROBLEMS

- Anovulation
- Polycystic ovary syndrome
- Secretory malfunctions
- Inadequate progesterone secretion
- Inadequate luteal phase

FACTORS CONTRIBUTING TO MALE INFERTILITY

CONGENITAL FACTORS

- Maternal history of DES ingestion
- Absence of vas deferens or testis

EJACULATION PROBLEMS

- Retrograde ejaculation
    - Diabetes
    - Nerve damage
    - Medications
    - Surgical trauma

SPERM ABNORMALITIES

- Inadequate sperm production
- Inadequate sperm motility
- Blockage of sperm along male reproductive tract
- Inability to deposit sperm in vagina

TESTICULAR ABNORMALITIES

- Orchitis
- Cryptorchidism
- Trauma
- Irradiation

COITAL DIFFICULTIES

- Obesity
- Spinal nerve damage

DRUGS

- Amebicide
- Methotrexate
- Sex hormones
- Nitrofurantion

OTHER FACTORS

- Infections
- Alcohol intake
- Nicotine

INTERACTIVE PROBLEMS

- Insufficient frequency of sexual intercourse
- Poor timing of intercourse
- Development of antibodies against partner's sperm
- Use of spermicidal lubricants
- Inability of sperm to penetrate the egg

DIAGNOSTIC EVALUATION

- **INITIAL ASSESSMENT**
  - Evaluation of infertility
  - Laboratory test
  - CBC
  - Thyroid function
  - Urinalysis
  - Infertility work-up
- **DIAGNOSTIC STUDIES**
  - Semen analysis
  - Cervical mucus assessment
  - Fern test
  - Spinnbarkeit test
  - Postcoital test
  - Basal temperature recordings
  - Serum progesterone test - 10 mg/ml or higher
  - Endometrial biopsy
  - Hysterosalpingography
  - Hysteroscopy
  - Other tests
    - Immunoassays of semen and male or female serum
    - Sperm penetration assay

MEDICAL MANAGEMENT

INFERTILITY OF FEMALE PARTNER

- Congenital anomalies (absence of-organs, improperly formed or abnormal organs) surgical treatment may help in some situations but cannot replace absent structures.
- Irregular/absent ovulation (ovum released irregularly or not at all)
- Endocrine therapy - clomiphene citrate (Clomid)/menotropins, (Pergonal) may induce ovulation; risk of ovarian hyperstimulation and release of multiple ova
- Tubal factors (fallopian tubes blocked or scarred from infection, surgery, endometriosis, neoplasms)
  - Antibiotic therapy
  - Surgery
  - Hysterosalpingogram
- Uterine conditions (endometrium unreceptive and infected)
  - removal of an IUD
  - antibiotic therapy
  - surgery may be helpful.

- Vaginal/cervical factors (hostile mucus, sperm allergies, altered pH due to infection)
  - treatment with antibiotics
  - proper vaginal hygiene
  - artificial insemination may be utilized.

INFERTILIY OF MALE PARTNER

- Impotence
  - psychological counseling
  - penile implants
- Low/abnormal sperm count (fewer than 20 million/ml semen, low motility, more than 40% abnormal forms)
  - there is no good therapy
  - use of hormone
- Varicocele (varicosity within spermatic cord)- ligation may be successful
- Infection in any area of the male reproductive system (may affect ability to impregnate):
  - antibiotic therapy
- Social habits (use of nicotine, alcohol, other drugs; clothes that keep scrotal sac too-dose to warmth of body): changing these habits may reverse low/absent fertility.

ALTERNATIVES FOR INFERTILE COUPLES

- Artificial insemination by husband or donor
- In vitro fertilization
- Adoption
- Surrogate parenting
- Surrogate Embryo transfers
- Accepting childlessness as a life-style

NURSING MANAGEMENT

- Assist with assessment including complete history, physical exam, lab work-up, test for both partners
- Monitor psychological reaction to infertility
- Support couple through procedures and tests
- Identify any existing abnormalities and provide couple with information about their conditions
- Help couple acknowledge and express their feelings both separately and together

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