Normal pregnancy management

The woman should be instructed regarding:

Dietary advices

1. The pregnant woman will need additional 300 Kcals for the pregnant state that should be from diet.

2. An ideal pregnancy diet should be light, nutritious, easily digestible, rich in proteins, vitamins and minerals. The diet should consist of milk, plenty of green leafy vegetables and fruits as available in addition to the normal diet.

3. Foods rich in iron like green vegetables, banana and protein rich foods like nuts should be stressed upon.

4. Fat consumption can be predominantly of animal source for

vitamins A and D.

Exercise

1. Any exercise the woman is accustomed to prior to pregnancy can be continued, but not to the point of fatigue.

2. No new exercise should be initiated during pregnancy.

3. Sedentary women should be allowed only walking.

4. Women with multiple pregnancy and complications like heart disease, pregnancy-induced hypertension (PIH), intrauterine growth restriction (IUGR), history of preterm labour, antepartum haemorrhage (APH) and threatened abortion should not exercise.

Clothing: Should be loose, non-constricting.

Travel:

1. Road travel is allowed with safety belt.

2. Travelling in a pressurized aircraft is of no risk, but should walk about after every 2 hours.

Employment: Jobs requiring prolonged standing (>8 hours/day) are associated with risk of preterm delivery.

Clinical workup

1. During each antenatal visit per vaginal examination should be done.

2. Blood pressure (BP), weight, oedema, anaemia, cardiovascular, respiratory and breast examinations are done in every visit.

3. Symphyseal fundal height, presentation, foetal heart rate, amniotic fluid volume, inquiry about daily foetal movement charting and pelvic assessment at 37 weeks.

Folic acid supplementation: Women with history of neural tube defects should receive folic acid 5 mg/day at least 3 months before conception and should continue. In other woman folic acid supplementation may be started with iron therapy from 12 weeks or as soon as pregnancy is confirmed.

Iron supplementation: Dose of iron (60-100 mg elemental iron) and folic acid once daily from 12 weeks onwards. May be given in first trimester, if patient is not having vomiting.

Immunization

1. Vaccines containing live virus cannot be administered during pregnancy.

2. Two doses of tetanus toxoid 4-6 weeks apart.

3. The influenza vaccine is recommended for women who become pregnant during flu season-typically November through March. Can be given before or during pregnancy.

4. Mumps, measles and rubella vaccines are contraindicated, should be given a month or more before pregnancy.

10. Lab workup during pregnancy as follows:

Gestational age	Investigations
Initial (as early as possible)	Blood group and Rh typing Haemoglobin Urine (routine and microscopy) Screen for syphilis Hepatitis B infection screening (HBsAg)

16-18 weeks	Ultrasound for foetal anomalies, if indicated
26-28 weeks	Haemoglobin Diabetes screening Urine for albumin and sugar
32-36 weeks	Ultrasound, if indicated Haemoglobin Urine for albumin and sugar

11. USG during pregnancy: In the new WHO ANC guideline, an ultrasound scan before 24 weeks' gestation is recommended for all pregnant women to estimate gestational age, detect fetal anomalies and multiple pregnancies, enhance the maternal pregnancy experience. Necessity of USG will also depend on patient's condition. (Anomaly scan can be done any time between 18 weeks and 20 weeks plus six days).

Patient education

1. Identify if there are important taboos about foods which are nutritionally important for good health. Advise the woman against these taboos.

2. Advise the woman on how to prepare for delivery, when to go, what to bring and where to go in emergency.

3. Explain the danger signals when she should report to the health centre immediately, day or night, without waiting such as

a) Vaginal bleeding

b) Convulsion

c) Severe headache with blurred vision

d) Severe abdominal pain

e) Fast or difficult breathing

f) Escape of fluid from vagina or change in frequency or intensity of foetal movements

g) Persistent vomiting or decreased urine output.

4. Explain about black staining of stool due to oral iron, therefore, not to worry about it.

5. Iron and calcium supplements should be taken at different times of the day or at least 2 hours apart.

6. Discuss birth spacing after delivery and counsel on the importance of family planning. Give advice on correct and consistent use of condoms for dual protection from sexually transmitted infections or HIV and pregnancy.

7. Sexual intercourse should be avoided when abortion/preterm labour threaten and during the last 4 weeks of pregnancy.

8. Bowel: Constipation, fissures and haemorrhoids are common during pregnancy and should be treated with fluids, bulk laxatives and stool softeners.

9. Smoking, alcoholism and drugs of abuse are contraindicated. Caffeine is best avoided.

10. Daily foetal movement charting (DFMC): After 28 weeks, the woman should keep foetal movement count.

11. Follow up: WHO recommends at least 8 antenatal contact with medical care

Antenatal contact	Gestational age
Contact 1	1 up to 12 weeks
Contact 2	20 weeks
Contact 3	26 weeks
Contact 4	30 weeks
Contact 5	34 weeks
Contact 6	36 weeks
Contact 7	38 weeks
Contact 8	40 weeks

Abnormal pregnancy- ectoic pregnancy and molar pregnancy are discussed here**.**

Ectopic pregnancy

Ovum implants outside the uterine cavity commonly (95%) in a fallopian tube.

Patient commonly present with

1. Abdominal pain (97%). Unilateral or bilateral, may start before bleeding; radiates to shoulder tip; increase on passing urine.
2. Amenorrhoea (75%). Peak incidence of ectopic pregnancy after 7 week of amenorrhoea.
3. Irregular vaginal bleeding (79%).
4. Examination-blood pressure usually low (shock in 15–20%); abdominal tenderness± rebound or guarding (71%).

Management

1. Admit immediately for further investigation.

2. Resuscitation- correction of shock, blood transfusion as needed.

3. If not rupture then

    a) Watch and pregnancy may resolve spontaneously,

    b) If not then medical treatment with methotrexate.

4. If rupture then surgical management-laparotomy or laparoscopic surgery.

Molar pregnancy

A molar pregnancy also known as hydatidiform mole is a rare complication of pregnancy characterized by the abnormal growth of trophoblasts, the cells that normally develop into the placenta.

Symptoms

A molar pregnancy may seems like a normal pregnancy at first, but most molar pregnancies cause specific signs and symptoms, including:

1. Dark brown to bright red vaginal bleeding during the first trimester

2. Nausea and vomiting that are more frequent or severe than what’s normal during pregnancy Sometimes passage of grape like cysts through vagina

3. Abdominal pain

On examination

1. Rapid uterine growth-the uterus is too large for the stage of pregnancy

2. High blood pressure

Investigation

1. Human chorionic gonadotropin (hCG)- level is often much higher than normal pregnancy.

2. USG- will often show a “cluster of grapes” appearance.

Management

1. Most molar pregnancies will spontaneously expel the tissue.

2. D & C to remove the tissue

3. Pregnancy should be avoided for one year after a molar pregnancy.

4. Any birth control method is acceptable with the exception of an intrauterine device.

Follow up

1. Monitor the hCG levels- monthly for six months. To ensure that the mole has been removed completely. Traces of the mole can begin to grow again.

Multiple pregnancy

If more than one ovum is released during the menstrual cycle and each is fertilized by a sperm, more than one embryo may implant and grow in uterus. This type of pregnancy results in fraternal twins (dizygotic or more). When a single fertilized egg splits, it results in multiple identical embryos. This type of pregnancy results in identical twins (or more). Identical twins are less common than fraternal twins. A twin, triplet, or higher-order pregnancy (four or more babies) is called multiple pregnancy.

Symptoms of multiple pregnancy

1. More severe morning sickness than single baby.

2. Gain weight more quickly.

3. Most of the cases multiple pregnancies are discovered during an ultrasound exam.

Care and management of multiple pregnancy include the following:

1. Increased nutrition

Mothers carrying two or more fetuses need more calories, protein, and other nutrients, including iron. Higher weight gain is also recommended for multiple pregnancy.

2. More frequent prenatal visits

Multiple pregnancy increases the risk for complications. More frequent visits may help to detect complications early enough for effective treatment or management. The mother's nutritional status and weight should also be monitored more closely.

3. Referrals

Referral to a maternal-fetal medicine specialist, called a perinatologist, for special testing or ultrasound evaluations, and to coordinate care of complications, may be necessary.

4. Increased rest

Some women may also need bed rest- either at home or in the hospital depending on pregnancy complications or the number of fetuses. Higher order multiple pregnancies often require bed rest starting in the middle of the second trimester. Preventive bed rest has not been shown to prevent preterm birth in multiple pregnancy.

5. Maternal and fetal testing

Testing may be needed to monitor the health of the fetuses, especially if there are pregnancy complications.

6. Tocolytic medications

Tocolytic medications may be given, if preterm labor occurs, to help slow or stop contractions of the uterus. These may be given orally, in an injection or intravenously. Tocolytic medications often used include magnesium sulfate.

7. Corticosteroid medications

Corticosteroid medications may be given to help mature the lungs of the fetus.

8. Cervical cerclage

Cerclage (a procedure used to suture shut the cervical opening) is used for women with an incompetent cervix. Some women with higher-order multiples may require cerclage in early pregnancy.

Blighted ovum

A blighted ovum is a fertilized egg that implants itself in the uterus but doesn't become an embryo. The placenta and embryonic sac form, but remain empty. There's no growing baby. It's also known as anembryonic gestation or anembryonic pregnancy. The placenta still produces human chorionic gonadotropin (hCG) so blood and urine pregnancy tests will be positive.

What are the treatment options?

May be

1. Waiting for spontaneous miscarriage.

2. Drug to induce abortion e.g. misoprostol

3. D and C (dilation and curettage) to remove the placental tissues from the uterus.

PV bleeding in early pregnancy

It implies bleeding up to 14th week of pregnancy. Bleeding in early pregnancy occurs in 1 in 4 pregnancies. Causes are

1. Bleeding in normal pregnancy-largest group

2. Miscarriage

3. Ectopic pregnancy

4. Trophoblastic disease

5. Non-obstetric conditions e.g. friable cervix, polyp, cervical neoplasia.

Assessment

1. Check LMP and pregnancy test result (do a test if needed)

2. Take a history of pain and bleeding; pain preceding bleeding suggests ectopic pregnancy is more likely.

3. Have any products of conception been passed?

4. Check pulse (>100 beats/minute suggests shock), BP and temperature.

5. Abdominal examination- guarding, peritonism and/or unilateral tenderness suggest ectopic pregnancy.

6.Pelvic examination- assess uterine size, cervix-is the cervix open (a closed cervix admits only one fingertip in a multiparous woman).

Initial management

1. If severe bleeding and/or pain, shocked or toxic, admit to Gynaecology department as an emergency.

2. Open IV channel and correction of shock if any.

3. Send blood for grouping and cross matching.

4. Assess viability of pregnancy with USG-at 5 week of gestation, sac ± yolk sac is seen; at 6-7 week a fetal pole and fetal heart beat is usually seen.

5. Bleeding in early normal pregnancy-often termed threatened miscarriage. If fetal heart is seen on USG then there is 97% chance of continuing the pregnancy.

Miscarriage/spontaneous abortion

Occurs in 1 in 5 pregnancies, 80% at <12week gestation.

Risk factors of miscarriage/spontaneous abortion are

1. Maternal age ≥ 35 years or paternal age ≥ 40 years

2. Smoking

3. BMI > 29 kg/m2

4. Excess alcohol

Causes of miscarriage/spontaneous abortion

1. Fetal abnormality (50%)

2. Multiple pregnancy

3. Uterine abnormality- fibroids, polyps, congenital abnormality, cervical incompetence

4. Systemic disease- renal, autoimmune or connective tissue disease- particularly SLE, PCOS, DM, systemic infection

5. Drugs- cytotoxics, diethylstilbestrol

6. Placental vascular abnormalities

Classification of miscarriage/spontaneous abortion are

1. Complete abortion/miscarriage- history of PV bleeding, there is no products of conception in the uterus.

2. Incomplete abortion/miscarriage- history of PV bleeding. Products of conception remain in the uterus but there is no fetal heart beat. Usually admit for evacuation of retained products of conception (D&C). Some women prefer a 'watch and wait' approach for spontaneous abortion.

3. Missed (or delayed) miscarriage- no PV bleeding. Usually discovered when no heart beat is seen on routine antenatal scan. Treatment is D&C. A 'watch and wait' approach is possible, but at 4 week only 66% are complete and associated with longer bleeding. Medical management with prostaglandin analogues ± antiprogesterone priming is an alternative to D&C.

4. Threatened abortion - A threatened abortion is when vaginal bleeding occurs, and the diagnostic for a spontaneous abortion has not been met.

Diagnostic tools of threatened abortion

1. Symptoms- lower abdominal pain and per vaginal bleeding

2. Diagnosis can be confirmed by hCG and an USG. The ultrasound can also help rule out an ectopic pregnancy and to evaluate for retained products of conception. A yolk sac is typically seen at 36 days and a heartbeat is seen on ultrasound at approxmately 45 days after the last menstruation.

Management of threatened abortion

1. Bed rest is the primary requirement to recover from a threatened abortion. Any kind of physical activities, including sexual intercourse, should be strongly avoided.

2. Repeat pelvic ultrasound weekly until a viable pregnancy is confirmed or excluded.

3. If the tests reveal reduce levels of hormones, treatment of threatened abortion with progesterone injections might also be undertaken to bring them to the required amount.

4. To stop the bleeding or any uterine contractions, haemostatic drugs or even tocolytic agent based medication might be given.

5. Treat associated DM, hypothyroidism and Rh incompatibility between mother and fetus.

Recurrent miscarriage

When a patient has ≥3 miscarriages. Those patient must refer for further investigation. Consider checking antiphospholipid antibodies prior to referral. No cause is found in half of those are referred. They have a 70% chance of successful pregnancy.

Antepartum haemorrhage (APH)

Any bleeding in pregnancy before 24 week of gestation is antepartum haemorrhage (APH).

Causes of APH

A) Uterine causes

1. Abruption of placenta

2. Placenta praevia

3. Vasa praevia

4. Circumvallate placenta

5. Placental sinuses

B) Lower genital tract causes

1. Cervical—polyp, erosion, carcinoma, cervicitis

2. Vaginitis

3. Vulval varicosities

Management

1. Admit the patient in specialized obstetric unit for identification and correction of cause

2. IV access, send blood for grouping and cross matching

3. Correction of shock (if any)

Postpartum haemorrhage (PPH)

Primary postpartum haemorrhage (PPH)

Loss of >500 mL blood within 24 hours of delivery. May occur in the community after home delivery or delivery in a community obstetric unit, or after rapid discharge from a consultant led unit.

Causes of primary PPH (the four Ts)

1. Tone- uterine atony (90%)

2. Tissue- retained products of conception

3. Trauma- of the genital tract

4. Thrombin-clotting disorders

Secondary PPH

Excessive PV blood loss 24 hour after delivery. Peak incidence: 5-12 days after delivery.

Causes of secondary PPH

1. Postpartum infection

2. Sometimes associated with retained placental tissue or clot.

Management

1. If bleeding is slight, manage conservatively. Take a vaginal swab and start oral antibiotics- amoxicillin 500 mg TDS and metronidazole 400 mg TDS. Consider referral for USG and/or obstetric review, if not settled. ,

2. If the woman is unwell (shocked or toxic) then start intravenous antibiotics, admit to an obstetric unit for further investigation ± evacuation of retained products of conception.

Nausea and vomiting during pregnancy

1. Occurs in >80% from 4th -6th week.

2. Occurs at any time of day (‘morning’ sickness in <20%) and made worse by odours associated with preparation/sight of food.

3. If severe exclude multiple pregnancy, trophoblastic disease and UTI.

4. Symptoms usually improve by 14th -16th week, although persist in some.

Management of nausea and vomiting

1. Reassure-normal part of pregnancy.

2. Adjust lifestyle

3. Advice frequent small meals- avoid greasy/spicy foods; eat foods which patient like most.

4. Maintain fluid intake-small amounts frequently.

5. If severe/disabling consider antiemetics e.g. meclizine hydrochloride, metoclopramide, cyclizine, ondansetron, palonosetron; any of those can be used. Suppositories are an effective method of administration if oral route is not tolerated.

6. If dehydrated or >2-5 kg weight loss (hyperemesis gravidarum) admit for rehydration.

Heart burn during pregnancy

1. Affects 70% of women in the third trimester.

2. Reassure that it is not harmful.

3. Advise low fat, bland food, small amount and frequent meals.

4. If symptoms worse at night then avoid eating late at night and consider raising the head end of the bed (1-2 bricks under the bed).

5. Avoid gastric irritants, e.g. caffeine.

6. Antacid preparations e.g. milk of magnesia are helpful if lifestyle modifications are ineffective.

Headache during pregnancy

1. Usually tension headache. Migraine may increase or decrease in pregnancy.

2. Check BP and urine for protein to exclude pre-eclampsia.

3. Treat with rest and analgesic (paracetamol).

Fatigue during pregnancy

1) Almost universal symptom of early pregnancy. Reaches peak at 12-15 week. In late pregnancy due to increase physical effort needed to do everyday tasks and sleep deprivation.

2) Exclude anaemia, DM and hypothyroidism, if nothing found then just reassure, advice rest and adjustment of lifestyle.

Insomnia during pregnancy

1. Avoid drug treatment.

2. Reassure.

3. Relaxation techniques and mild physical exercise prior to sleep can help.

4. Non-pharmacological measures may help.

উপদেশ

১। সন্ধ্যার পর ৩০ মিনিট হাটবেন।

২। বিকেলের পর চা খাবেন না।

৩। দিনের বেলা ঘুমাবেন না।

৪। ঘুমাতে যাবার ঠিক পূর্বে বিছানায় যাবেন।

Hypotension during pregnancy

1. Common symptom of early pregnancy. Patient complaint of vertigo during posture change.

2. May aggravate after vomiting, less fluid intake.

3. Exclude any PV or other bleeding.

4. Advise to avoid standing suddenly and avoid hot baths.

5. Take plenty of liquid food e.g. fluid, soup etc.

Management of hypertension during pregnancy

Hypertensive disorders during pregnancy	Definition
Hypertension in pregnancy	Blood pressure ≥140/90 mm Hg on two

	separate occasions, at least 4 hrs apart.
Pre-existing hypertension	Hypertension prior to pregnancy or occurring before 20 weeks of gestation.
Gestational hypertension	Hypertension occurring after 20 weeks of gestation without proteinuria or any other features of pre-eclampsia.
Pre-eclampsia	Hypertension occurring after 20 weeks gestation with proteinuria, maternal organ dysfunction or uteroplacental dysfunction.
Eclampsia	Generalized seizures in a pregnant woman previously diagnosed with pre-eclampsia.

Following antihypertensive drugs are safe to use during pregnancy

1. Methyldopa up to 2000 mg/day
2. Labetalol initially 100 mg BD can increase to 2.4 gm/day
3. Nifedipine 10-20 mg BD maximum 90 mg/day
4. Amlodipine 5-10 mg/day
5. Doxazosin not use commonly.

Pre-eclampsia

Criteria for diagnosis

1. BP >140/90 or >+30/+15 from baseline BP.
2. Proteinuria ≥0.3gm/24 hours. Urine dipstick is a useful screening tool-if ≥1+ protein then probably significant.

Risk factors for pre-eclampsia

Moderate risk

1. First pregnancy
2. Age ≥ 40 years
3. Pregnancy interval >10 years
4. BMI ≥ 35kg/m2 at first visit

5. Family history of pre-eclampsia

6. Multiple pregnancy

High risk

1. Hypertensive disease during previous pregnancy

2. Chronic kidney disease

3. Autoimmune disease, e.g. SLE or antiphospholipid syndrome

4. Type 1 or type 2 DM

5. Chronic hypertension

If ≥1 high risk factor or ≥2 moderate risk factors, advise aspirin 75 mg from 12 week to birth and refer for specialist obstetric care.

Interval for routine BP check up

Pre-eclampsia is asymptomatic until its terminal phase and onset may be rapid. Frequent BP screening is essential. Check urine for protein at the time of each time blood pressure measurement.

1. If no risk factors for pre-eclampsia then routine antenatal care

2. If one moderate risk factor for pre-eclampsia, recheck BP at least every 3 week from 24-32 week of gestation and at least every 2 week >32 week of gestation.

3. If ≥1 high risk factor or ≥2 moderate risk factors, monitor as directed by the specialist.

Management

Control BP is the main management. Target BP is <150/100 (<140/90 if target organ damage).

Eclampsia

Occurs when a pregnant woman has convulsion as a result of pre-eclampsia. Usually BP is very high and if the baby is not yet born, it becomes distressed. There is a serious risk of stroke in the mother.

44% occur after the baby is born usually <24 hours after delivery. Give buccal midazolam (10 mg) or PR/IV diazepam (10–20 mg) or IV lorazepam (4 mg) and admit as an acute emergency.

HELLP syndrome

Occurs in pregnancy or within 48 hours after delivery. Associated with severe pre-eclampsia.

1. Haemolysis

2. Elevated liver enzymes

3. Low platelets

Signs

1. Hypertension (80%)

2. Right upper quadrant pain (90%)

3. Nausea and vomiting (50%)

4. Oedema.

For prevention and management of preeclampsia and eclampsia following are recommended by WHO

1. Provide calcium to all women with low calcium intake.

2. Low dose aspirin to selected groups for the prevention of

preeclampsia and eclampsia.

3. Control of blood pressure. (Give antihypertensive drugs)

4. Light exercise e.g. walking

5. Magnesium sulfate is the anticonvulsant of choice for women with severe pre-eclampsia or eclampsia. If possible, give a full regimen of magnesium sulfate to women with eclampsia or severe pre-eclampsia. If the administration of a full regimen is not possible, these women should be given the loading dose of magnesium sulfate and should be immediately transferred to a higher level health care facility for further treatment. Dose of magnesium sulfate, loading dose is 10 to 14 gram. Maintenance dose 1-2 gram/hour by constant I.V. infusion.

Practically before giving magnesium sulfate urine output should be measured. In ward usually given (injection nalepsin, each bottle contains 100 ml intravenous solution which contains 4 gm magnesium sulphate (16.4 mmol magnesium) as per follows

Dose	Drops/minute
Loading dose: 12 gm 1st bottle 2nd bottle 3rd bottle	 IV running IV 12 drops/minute IV 6 drops/minute
Maintenance dose: 1 gm/hour for 12 hour 4th bottle 5th bottle 6th	 IV 6 drops/minute IV 6 drops/minute IV 6 drops/minute

Sweating and feeling hot during pregnancy

1. Common during pregnancy.
2. Measure temperature to exclude fever.
3. If apyrexial, reassure as normal symptom of pregnancy.
4. If fever then identify the source and treat the infection.

Hypothyroidism in pregnancy

1. During pregnancy increase thyroxine binding globulin and placenta metabolize thyroxine. So, dose of levothyroxine replacement therapy increase by 30–50% from early in pregnancy. As for example, if a patient is getting levothyroxine 50 mcg 2 tablets in prepregnancy period then during pregnancy she needs to take levothyroxine 50 mcg 3 tablets.
2. FT4 & TSH should be measured in every trimester and adjust dose of levothyroxine.

Thyrotoxicosis in pregnancy

1. Gestational thyrotoxicosis is usually associated with multiple pregnancies and hyperemesis gravidarum. Transient and usually does not require antithyroid drug treatment.

2. Graves' disease- it is the most common cause of sustained thyrotoxicosis in pregnancy.

3. Antithyroid drugs- propylthiouracil should be used in the first trimester, with carbimazole substituted in the second and third trimesters.

Gestational diabetes mellitus

Risk factors for gestational diabetes

1. Body mass index > 30 kg/m2

2. History of previous macrosomic baby weighing ≥ 4.5 kg

3. Previous gestational diabetes

4. Family history of diabetes (first-degree relative with diabetes)

5. Family origin with a high prevalence of diabetes:

a) South Asian (specifically women whose country of family origin is India, Pakistan or Bangladesh)

b) Black Caribbean

Screening for gestational diabetes

1) All women at high risk should have an oral glucose tolerance test at 24-28 weeks.

2) Measurement of HbA1c and/or blood glucose at booking visit is usually recommended.

Management of gestational diabetes

1. Reduce intake of refined carbohydrate.

2. Light exercise e.g. walking.

3. Oral drug- metformin, glibenclamide are safe to use in pregnancy.

4. Insulin if necessary.

Target blood glucose in GDM

1) Pre-prandial level of < 5.3 mmol/L (95 mg/dL) and

2) 1-hour or 2-hour post-prandial level of < 7.8 mmol/L

(140 mg/dL) and < 6.4 mmol/L (114 mg/dL), respectively.

Follow up after delivery

After delivery measure fasting blood glucose and HbA1c at 6 weeks post partum and annually to screen for the development of diabetes.

Asthma and pregnancy

1. Asthma during pregnancy follows the rule of one third-one third become worse, one third remains same and one third improve.

2. All asthma medicine has been shown to be absolutely safe for both the mother and baby. Inhaled route is preferred than oral route.

3. Although it is evident that prednisolone is safe during 1st trimester, it's use should be limited as rescue therapy for 7-14 days.

4. During labour, induction is usually done with prostaglandin E2 and oxytocin. It is better to avoid injection ergometrin.

5. Asthma medicine may enter the breast milk but the concentration is extremely small and do not have any adverse effect on the baby.

6. Caesarean section is not an absolute indication in an asthmatic mother.

UTI in pregnancy

1. If suspect UTI during pregnancy then advice urine R/M/E and C/S.

2. Screening for UTI in first antenatal check up, as most of the UTI remain asymptomatic.

3. 2–5% of pregnant women have asymptomatic bacteriuria, defined as pure growth of $>10^5$ organisms/mL, 1 in 3 will develop symptomatic infection (acute cystitis, pyelonephritis) if left untreated.

4. Treat UTI and asymptomatic bacteriuria for at least 1 week with suitable antibiotic. Choice of empirical antibiotic are- cefuroxime, nitrofurantoin, amoxicillin etc. Change according to C/S report.

5. Check urine R/M/E following treatment to ensure infection has cleared.

Helminth infestation during pregnancy

1. Routine dewarming is not recommended during pregnancy.

2. Antihelminth should not be given in first trimester.

3. In documented helminth infestation treatment given with albendazole 400 mg stat or mebendazole 100 mg/dose total 5 doses.

Vaginal candidiasis during pregnancy

Vaginal candidiasis is a common vaginal infection in pregnancy causing itching and soreness. There is no evidence that this infection harms the baby. Antifungal creams are effective, topical imidazole appears to be more effective than nystatin for treating symptomatic vaginal candidiasis in pregnancy.

Scabes during pregnancy

Treatment-topical permithrin can be used (category-B).

LBP during pregnancy

Affects 60% of pregnant women, usually from the 2nd trimester onwards and worse in the evenings, may interfere with sleep/activities. This is due to weight gain during pregnancy.

Management

1. Avoid bad posture, bending, weight lifting etc.

2. Encourage light exercise (unless contraindicated e.g. pre-eclampsia)

3. Treat with simple analgesia e.g. paracetamol.

Carpal tunnel syndrome

Carpal tunnel syndrome occurs due to compression of the median nerve as it passes under the flexor retinaculum. It usually associated with pregnancy, hypothyroidism, DM, obesity and carpal arthritis.

Diagnostic tools

1. Pain in the radial 3½ digits (thumb, index and middle finger) of the hand ± numbness, pins and needles and thenar muscle wasting. (Usually bilateral during pregnancy).

2. Symptoms worse at night and improved by shaking the wrist.

3. Bed side test: Phalen's test-hyperflexion of wrist for 1 minute triggers symptoms. Tinel's test-tapping over the carpal tunnel causes paraesthesiae.

4. Investigation- nerve conduction test (NCV). (Diagnosis is clinical, to confirm median nerve compression NCV can be done.

Management

1. Reduce movements of the wrist joint.

2. Night splints may be helpful.

3. Analgesic e.g. paracetamol

4. Vitamine B6 (pyridoxine) sometimes helpful

5. Local steroid injection.

If conservative treatment fails, constant paraesthesiae and/or triggering of fingers, refer to orthopaedics for division of the flexor retinaculum.

Leg muscle cramp during pregnancy

Leg cramp affects 1 in 3 pregnant woman in late pregnancy. Worse at night. Following measures may prevent or reduce muscle cramp during pregnancy.

1) Raising the foot end of the bed by 20 cm (e.g. 1-2 bricks) can help.

2) Drink plenty of fluids to keep your muscles hydrated.

3) If you get cramps at night, take a bath before bed to relax leg muscles.

4) When you have a cramp, put a warm towel or hot water bottle on the area.

5) If you get a cramp, straighten your leg, heel first and wiggle your toes. Gently massage your calf to relax the muscle.

Haemorrhoids during pregnancy

1. Affect 8% of women in the third trimester.

2. May be associated with itching, pain and bleeding.

3. Advise to increase fiber intake.

4. Avoid constipation (if necessary use laxative)

5. Treat prolapse with ice packs and replacement.

Peripheral paraesthesia during pregnancy

1. Abnormalities of sensation (e.g. tingling, pins and needles) of hands/feet are common.

2. Reassure.

3. Symptoms usually resolve after delivery.

4. Pyridoxine may help (25 mg/day).

Swelling during pregnancy

1. Fluid retention affects 80%-commonly at ankles, hands/fingers, face.

2. If severe/sudden increase in oedema, exclude pre-eclampsia (check BP, dipstick urine for protein).

Varicose veins during pregnancy

1. Cause aching legs, fatigue, itch and ankle/foot swelling.

2. If ankles are swollen, exclude pre-eclampsia (check BP, dipstick urine for proteinuria).

3. Elevate legs when sitting, provide support stockings and encourage walking/discourage standing still.

4. If develop complications e.g. thrombophlebitis then treat with antibiotic, ice packs, elevation, support stockings and analgesia.

Constipation during pregnancy

Affects up to 40% of pregnant women. Due to increase progesteron level during pregnancy which relax the smooth muscle of the intestine.

Management

1. Increase fluid and fibre intake.

2. If necessary use a bulk forming laxative, e.g.

ispaghula husk.

3. Exercise 30 minutes walking

4. Reduce or stop iron supplementation.

5. Stool softeners e.g. milk of magnesia may help.

6. Avoid bowel stimulants (bisacodyl) as they increase uterine activity.

7. Lactulose can be used (pregnancy category-B).

Vaginal discharge during pregnancy

1. Usually increase in pregnancy.

2. Investigate if smelly, itchy, sore or associated with dysuria.

3. If the cause is fungal infection (candidiasis) then antifungal (terbinafine) can be used.

Pruritus and rashes in pregnancy

During 1st antenatal check up

1. Enquire if the woman has had chickenpox and/or shingles in the past.

2. If not, advise her to make urgent contact if she develops any rash or has contact with anyone who has rash.

Presentation with itching

Itching without rash then consider

1. Hepatic causes-pruritus gravidarum or recurrent cholestasis of pregnancy, affects 2–20 in every 100 pregnancies and sometimes runs in families. Usually begins in the third trimester reaching a peak in the last 1 month.

-Frank jaundice is rare, if present then refer urgently to an obstetrician.

-No jaundice then check LFTs. Refer to obstetrician if LFT found abnormal.

Otherwise, treat with moisturizers (e.g. diprobase) ± oily calamine. Antihistamines do not help. Pruritus gravidarum disappears after delivery but recurs in subsequent pregnancies (40–50%) and may recur with combine hormonal contraceptive.

2. Other causes

I. Endocrine- DM, thyrotoxicosis, hypothyroidism-consider checking blood glucose and TFTs.

II. Chronic renal failure- check urine R/M/E and creatinine.

III. Iron deficiency-check CBC and ferritin.

IV. Drug allergies

V. Psychological-obsessive states, schizophrenia.

Itching with rash then consider

1. Common skin diseases e.g. eczema, psoriasis, urticaria

2. Skin changes specific to pregnancy

3. Infectious causes:

I. Rubella

II. Parvovirus B19

III. Chickenpox/shingles

IV. Measles

V. Streptococcal infection

VI.Meningococcal infection

VII. Enterovirus infection

VIII. EBV

IX. CMV

X. Syphilis

4. Itchy rashes specific to pregnancy

a) Abdominal striae-may itch

b) Pruritic urticarial papules and plaques of pregnancy-occurs in first/multiple pregnancies or if excessive weight increase in pregnancy. Intensely itchy rash usually confined to lower abdomen/buttocks. Appears at >35weeks gestation. Treat with calamine

and/or topical steroids. Clears spontaneously <6 weeks after delivery. Recurrence in subsequent pregnancies is rare.

c) Pemphigoid gestationis- is rare. Starts in mid-pregnancy and appears as a generalized, intensely itchy rash. Refer for specialist management. May recur in subsequent pregnancies/with combine hormonal contraceptive.

d) Impetigo herpetiformis-is rare. Starts in the third trimester, mild itch. If patient become systemically unwell then refer. Remits after delivery but may recur in later pregnancies.

Hepatitis B screening and management of HBsAg positive mother and new born after delivery

1. Women are routinely offered screening for hepatitis B infection in pregnancy.

2. Transmission to the baby occurs during labour (up to 30% of infants of women seropositive for HBsAg). Infants infected are at high risk (90%) of becoming chronic carriers and of developing chronic liver disease.

3. After delivery refer infected women for hepatology assessment.

4. Immunization of the infant is mandatory

a) Hepatitis B vaccine 1st dose-as soon as possible after birth, 2nd dose at 1 month, 3rd dose at 2 month and a booster dose at 1 year.

b) Hepatitis B immunoglobulin: Dose: 0.5 ml IM in the anterolateral thigh. Give as soon as it is determined that the mother is HbsAg positive, but must be within 12 hours of birth.

Immunoprophylaxis for Rh negative mother

Immunoprophylaxis for Rh negative mothers using anti-D immunoglobulin (300 mcg) (anti-D Ig) is given IM into the deltoid muscle as soon as possible after the sensitizing event-preferably within 72 hours though there is evidence of benefit up to 9 days. Women already sensitized should not be given anti-D Ig.

Use of diuretic to treat edema in pregnancy

Usually not recommended, because it reduces amount of amniotic fluid.

Use of aspirin in pregnancy

1. To prevent preeclampsia and eclampsia (should be initiated between 12 weeks and continued daily until delivery).

2. Low dose aspirin prophylaxis should be considered for women with more than one of several moderate risk factors for preeclampsia.

3. Also indicated in antiphospholipid syndrome

Use of allystrenol

Allylestrenol is a synthetic progestogen used to treat miscarriages and preterm labor in women. It is not recommended for use in female under the age of 16 years. Indications are

1. Premature labor

2. Miscarriage

3. Habitual abortion

4. Intrauterine growth retardation

5. Failure of implantation.

What are the treatments to increase lactation?

1. Non-pharmacological approaches such as correct breast feeding advice, support and frequent breast feeding/sucking, plenty of fluid intake.

2. Domperidone and metoclopramide use widely to stimulate prolactin and enhance milk supply.

What is the treatment to stop lactation?

1. Cabergoline is currently most effective option. Dose is 0.5 mg half tablet 12 hourly for 2 days.

2. Bromocriptine 2.5 mg twice daily for 2 weeks. To minimize side effects is best achieved by gradual introduction e.g. 2.5 mg for 3 days then 2.5 mg BD.