بسم الله الرحمن الرحيم
Minor disorders of Pregnancy

Lecture 11

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Hyperemesis gravidarum

VOMITING DURING PREGNANCY USUALLY STARTS EARLY ABOUT 6TH OR 8TH WEEK, PASSES OFF BY THE 12TH WEEK.

1ST TRIMESTER IT IS MILD, ITS FREQUENCY BEING ONCE OR TWICE IN THE MORNING & THE QUANTITY SMALL & IT DOES NOT AFFECT THE MOTHER’S HEALTH.

SOMETIMES THE VOMITING PERSISTS, INCREASES IN FREQUENCY, VERY LITTLE NOURISHMENT IS RETAINED & THE PATIENT LOSES WEIGHT. THIS EXCESSIVE VOMITING IN PREGNANCY IS CALLED HYPEREMESIS GRAVIDARUM.
HYPER = EXCESSIVE
EMESIS = VOMITING
GRAVIDA = PREGNANT.

DEFINITION:
IT IS A SEVERE TYPE OF VOMITING OF PREGNANCY WHICH HAS GOT DELETERIOUS EFFECT ON THE HEALTH OF THE MOTHER &/OR INCAPACITATES HER IN DAY TO DAY ACTIVITIES.
Epidemiology

It is more common in:
- Primigravida
- Multiple pregnancy
- History of previous hyperemesis
- Mother or sister with HG
- The presence of trophoblastic disease
- Previous intolerance to oral contraceptives
- Young maternal age under the age of 20
- Low to middle socioeconomic class
- Lower levels of education
- Carrying a female fetus
- No previous completed pregnancies
- Obesity
- History of infertility
- Corpus luteum in right ovary
- Nonsmokers
- Women prone to travel sickness
- Medical complications of hyperthyroid disorders, psychiatric illness, gastrointestinal disorders, pregestational diabetes, and asthma

It is less common with:
- Maternal age older than 30 years
- Maternal smoking
- Unmarried mothers
THEORIES

1) HORMONAL: ↑ HCG
   ↓ PROGESTERONE
   ↓ OESTROGEN

1) PSYCHOGENIC

2) DIETIC DEFICIENCY: VITAMIN B1, B6, PROTEINS, LOW CARBOHYDRATE

3) ALLERGIC: SOME PRODUCTS SECRETED BY OVUM
PATHOLOGY

- **LIVER**: CENTRILOBULAR FATTY INFILTRATION WITHOUT NECROSIS
- **KIDNEYS**: FATTY CHANGE IN CELLS OF CONVOLUTED TUBULES.
- **HEART**: SUBENDOCARDIAL HAEMORRHAGE.
- **BRAIN**: WERNICKE'S ENCEPHALOPATHY.
- **METABOLIC**: KETOACIDOSIS.
- **BIOCHEMICAL**: LOSS OF WATER, SODIUM, POTASSIUM & CHLORIDES.
- **CIRCULATORY**: HAEMOCONCENTRATION
The Causes

- High-fat diet
- Psychological
- Genetic
- Ovarian hormones (oestrogens, progesterones)
- Liver dysfunction
- Helicobacter pylori
- Reduced motility and secretion
- Serotonin
- High levels of hCG
- Allergy to corpus hormones
- Decreased vitamin b6 and b1 vitamin
- Decreased adrenocorticosteroid hormone
- Hyperthyroidism
CLINICAL FEATURES

□ EARLY:

- VOMITING OCCURS INDEPENDENT OF FOOD.
- VOMITUS CONTAINS BILE STAINED FLUID OR FOOD
- NORMAL ACTIVITIES ARE NORMAL.
- NUTRITION DOES NOT SUFFER
- O/E SHE LOOKS WELL & NO ABNORMALITY IS DETECTED.
- BLOOD BIOCHEMISTRY & URINALYSIS REVEAL NO ABNORMALITY.
LATE SYMPTOMS:

- VOMITING IS INCREASED IN AMOUNT & FREQUENCY.
- VOMITUS MAY BE COFFEE GROUND OR EVEN CONTAIN BLOOD.
- URINE QUANTITY REDUCED EVEN TO STAGE OF OLIGURIA.
- CONSTIPATION, AT TIMES DIARRHOEA.
- EPIGASTRIC PAIN
- PATIENT IS CONFINED TO BED.
Effect Of Severe Vomiting

Morning sickness

Dehydration

Excessive vomiting

Starvation

Haemo-concentration

Raised blood urea

Ketosis

Hepatitis

Emaciation

Polyneuritis

Urine

- Oliguria
- Concentrated urine
- Low urinary chlorides
- Ketonuria
- Proteinuria
- Bile salts

Wernicke's encephalopathy
Complications

- WERNICKE’S ENCEPHALOPATHY - MENTAL APATYH, RESTLESSNESS, SLEEPLESSNESS, CONVULSION OR EVEN COMA.
- KORSAKOFF’S PSYCHOSIS - MENTAL CONFUSION WITH LOSS OF MEMORY OF RECENT EVENTS.
- EYE COMPLICATIONS - DIPLOPIA, DIMNESS OF VISION OR EVEN BLINDNESS.
- STRESS ULCER IN STOMACH
- JAUNDICE
- PERIPHERAL NEURITIS.
SIGNS:

- PROGRESSIVE EMACIATION WITH LOSS OF WEIGHT.
- ANXIOUS LOOK.
- EYES- SHRUNKEN, APATHETIC & DULL.
- SKIN IS LUSTRELESS & INELASTIC.
- TONGUE- DRY, BROWN, THICKLY COATED
- TEETH COVERED WITH SORDES.
- BREATH – ACETONE SMELL
- TACHYCARDIA
- HYPOTENSION
- VAGINAL EXAMINATION TO CONFIRM THE DIAGNOSIS OF PREGNANCY.
INVESTIGATIONS

- **URINALYSIS:**
  - QUANTITY – LESS
  - DARK COLOUR
  - TEST FOR ACETONE POSITIVE
  - OCCASIONAL PRESENCE OF PROTEINS.

- **BIOCHEMICAL & CIRCULATORY CHANGES:**
  - HAEMOCONCENTRATION
  - HYponatremia
  - HYpokalemia

- **OPHTHALMOSCOPIc EXAMINATIOn IS REQUIRED If PATIENT IS SERIOUSLY ILL.**

- **ECG WHEN THERE IS ABNORMAL POTASSIUM LEVEL.**
Prophylaxis

Although there are no known ways to completely prevent hyperemesis gravidarum, the following measures might help keep morning sickness from becoming severe:

- Eating small, frequent meals
- Eating bland foods
- Waiting until nausea has improved before taking iron supplements
- Using a pressure-point wrist band, vitamin B6, and/or ginger
Nausea and vomiting in a pregnant woman

Rule out nonpregnancy causes (see Table 1).

Positive findings (i.e., nonpregnancy cause identified)
- Treat or refer as appropriate.

Negative findings
- Dietary changes and emotional support

No resolution
- Options: pyridoxine (vitamin B6), doxylamine (Unisom)*, acupressure, ginger

No resolution
- Check ketone and electrolyte levels.

Abnormal
- Options: intravenous fluids, hospitalization, antiemetics, antihistamines, anticholinergics, corticosteroids

No resolution
- Consider total parenteral nutrition.
- Obtain maternal-fetal medicine consultation.

Resolution
- Routine prenatal care

Resolution
- Routine prenatal care

Normal
- Options: antiemetics, antihistamines, anticholinergics, corticosteroids

No resolution
- Routine prenatal care

Resolution
- Routine prenatal care
GENERAL MANAGEMENT

- **ISOLATION**: MILD CASES IMPROVE BY CHANGES OF PLACE. SEVERE CASE IS HOSPITALISED.
- **DIET**:
  - **MILD CASE**: FREQUENT CARBOHYDRATE MEAL.
  - **SEVERE CASE**: NIL BY MOUTH BUT PARENTERAL FEEDING. VITAMIN B1, B6 SUPPLEMENTS ARE GIVEN FOR DEHYDRATION: 3 LITRES OF 5% GLUCOSE SALINE & RINGER LACTATE SOLUTION ARE INFUSED IN 24 HRS.
HYPEREMESIS CHART

- FLUID IN TAKE & OUT PUT IN 24 HRS
- CHARACTER OF VOMITUS
- RECORD OF VITAL SIGNS AT LEAST TWICE DAILY
- URINE EXAMINATION TWICE DAILY
- BLOOD BIOCHEMISTRY
- WEIGHT OF PATIENT
- ECG
We want to combine efficacy with safety.

Any of these could be first choices:
- Vit. B6 - 10-25 mg po TID
- Doxylamine (Unisom OTC) - 25mg po QD
First-line therapy for NVP
not associated with teratogenicity,
with proven effectiveness

- Pyridoxine (Vit. B6). 10-25 mg TID. Few side effects. Preg. Category: A
- Ginger root. 250 mg QID. Few to no side effects. Preg. Category: not rated
- Antihistamines - more sedating. Preg. Category: B
  - Diphenhydramine (Benadryl) 25-50 mg po Q 4-8 hrs.
  - Meclizine (Antivert) 25 mg po Q 4-6 hrs.
  - Dimenhydrinate (Dramamine) 50-100 mg po Q 4-6 hrs.
- Metoclopramide (Reglan) 5-10 mg po TID. Category: B
- Doxylamine (Unisom) 25 mg po QD. Category: none, but comprehensive review has shown safe.
Second-line choices for NVP: considered safe but clinically unproven, Category B or C

- **Anti-emetics**
  - Chlorpromazine (Thorazine): 10-25 mg po BID to TID.
  - Prochlorperazine (Compazine): 5-10 mg po TID to QID.
  - **Promethazine (Phenergan)**: 12.5 to 25 mg po Q 4-6 hrs.
  - Trimethobenzamide (Tigan): 250 mg po TID to QID.
  - Ondansetron (Zofran): 8 mg po BID to TID.
  - **Category B**, very expensive, only studied with hyperemesis

- **Steroids**
  - Methylprednisolone (Medrol) 16 mg po TID then taper. Could be a small teratogenic risk. Only studied with hyperemesis.
Gastric Reflux (Heartburn)

- Gastric reflux commonly occurs as a result of delayed gastric emptying, decreased intestinal motility, and decreased lower esophageal sphincter tone.

- Information on **lifestyle modification** includes awareness of posture, maintaining upright positions (especially after meals), sleeping in a propped up position and **dietary modifications** (e.g. small frequent meals, eat slowly, reduction of high-fat foods and caffeine).

- Antacid Preparations containing aluminium hydroxide are favoured. Both H2 receptor antagonists and proton pump inhibitors have been shown to be effective and safe in pregnancy but the manufacturers of both drug groups advise avoidance unless essential.
Constipation during Pregnancy is due to:

- Reduced motility of large intestine (progesterone effect).
- Increased water reabsorption from large intestine (aldosterone effect).
- Pressure on the pelvic colon by the pregnant uterus.
- Sedentary life during pregnancy.

Advice includes drinking plenty of fluids, high fibre foods and get plenty of exercise.

When fibre supplementation is not effective, stimulant laxatives have been shown to be more effective but cause more abdominal pain than bulk-forming laxatives.

No evidence currently exists for the effectiveness or safety of osmotic laxatives (e.g. lactulose) or faecal softeners in pregnancy.
Laxatives:

• **Surface Acting**: Soften and lubricate, ie mineral oils.

• **Bulk forming**: Stimulate peristaltism. ie wheat fibre.

• **Osmotic Agents**: Disturbing iso-osmotic balance inside the bowel leading to inhibiting the re-absorption of the bowel molecules. ie lactulose.
  
  • **Cathartics**: Irritate the bowel’s mucosa leading to low re-absorption of fluids in the bowel. ie senna and Castor oil.

• **Enemas and Suppositories**: ie Saline enema, Glycerin suppositories.
Fatigue and insomnia

- Fatigue is very common in early pregnancy and reaches a peak at the end of the first trimester. Rest, lifestyle adjustment and reassurance are usually all that is required. Fatigue also occurs in late pregnancy, when anaemia should be excluded.

- Insomnia is also very common and due to a combination of anxiety, hormonal changes and physical discomfort. Mild physical exercise before sleep may help but drug treatment should be avoided.
Pruritus

- Local causes are usually due to infections, e.g. scabies, thrush.
- Generalised itching is common in the third trimester and disappears after delivery.
- Treatment is with simple emollients but...

Cholestasis of pregnancy needs to be excluded by checking liver function tests (raised AST/ALT; alkaline phosphatase is increased in normal pregnancy and so an unreliable marker of cholestasis in pregnancy).
Oedema and varicose veins in the lower limbs & vulva are due to:

i - ↑ Venous pressure.

ii - Relaxation of the smooth muscles in the wall of the veins by progesterone.

iii - ↓ Osmotic pressure in blood.

iv - ↑ Capillary permeability (due to progesterone and aldosterone).

v - ↑ Interstitial pressure (Na retention).
Varicose Veins treatments

1. Avoid long periods of standing and encourage active exercise.
2. Avoid constricting clothes.
3. Keep the legs elevated while sitting and during sleep.
4. Use of elastic stockings:
   These should be removed at night and applied with leg elevated before getting out of bed in the morning (empty veins).
5. Stretch panties may be necessary for vulval varicosities.
Haemorrhoids:

- They occur due to:
  - Mechanical pressure on the pelvic veins.
  - Laxity of the walls of the veins by progesterone.
  - Constipation.
- Treatment for haemorrhoids includes diet modification, topical soothing preparations and surgery.
- However, surgery is rarely considered an appropriate intervention for the pregnant woman since haemorrhoids may resolve after delivery.
Vaginal discharge

- Women usually produce more vaginal discharge during pregnancy. If the discharge has a strong or unpleasant odour, is associated with itch or soreness or associated with dysuria, then infection needs to be excluded.
- Trichomoniasis is associated with adverse pregnancy outcomes, but the effect of metronidazole for its treatment in pregnancy is unclear.
- A topical imidazole is an effective treatment for thrush which is common during pregnancy but the effectiveness and safety of oral treatments for thrush in pregnancy is uncertain and these should be avoided.
• Spider telangiectasis & palmar erythema:
  Due to increased estrogen or cutaneous vasodilatation.

• Hyperpigmentation:
  Due to increased estrogen or melanocyte stimulating hormone or ACTH
I Chloasma gravidarum:

((mask of pregnancy)) a butterfly pigmentation on the cheeks and nose. It usually disappears few months after labour.
II Linea Nigra

Pigmentation in midline below the umbilicus
III Stria gravidarum

- Pigmentation in the lower abdomen, flanks, inner thighs, buttocks & breast and increase as pregnancy advances.
- It starts pink (stria rubra) then becomes pale to become white (stria albicans) after delivery, which persists. (Primigravida has stria rubra only, while multigravida has both S.R and S.A).
- **Pelvic pain** As the uterus grows, pulling and stretching of pelvic structures causes ligament pain which usually resolves by 22 weeks.

- **Backache** Many women develop backache during pregnancy and it often first develops during the 5th to 7th months of pregnancy. Encourage light exercise and simple analgesia, and consider physiotherapy referral. Exercising in water, massage therapy and group or individual back care classes have been shown to be effective interventions.

- **Symphysis pubis dysfunction** This is a collection of symptoms of discomfort and pain in the pelvic area, including *pelvic pain radiating to the upper thighs* and perineum. Discomfort can vary from mild to severe pain. There is no evidence for any specific treatment but elbow crutches, pelvic support and prescribed pain relief may help.
• **Peripheral paraesthesia** Fluid retention leads to compression of peripheral nerves. This often leads to **Carpal Tunnel Syndrome**, which can affect up to one half of all pregnancies. Often no specific treatment is required. Interventions include wrist splints, steroid injections and analgesia, but there is a lack of research evaluating effective interventions. Other nerves can be affected, e.g. lateral cutaneous nerve of the thigh.

• **Leg cramps** Leg cramps occur in 1 in 3 pregnancies. They occur in late pregnancy and are usually worse at night. Massaging the affected leg and elevation of the foot of the bed may help.
Gynecologic Tumors With Pregnancy
Leiomyoma

- About 1% in pregnant women
- It is formed of fibers and muscle of uterus and can be submucous, interstitial, or subserous
Fibroid with Pregnancy

- **Effect on Pregnancy**
  - *Abortion*... increase with submucous
  - *Incarceration* of RVF gravid uterus (posterior wall)
  - *Ectopic pregnancy* if pressing on the tube
  - *Preterm labor*
  - *Pressure symptoms* ...increase size of uterus above expected date

- Large abdominal tumor may cause abdominal discomfort, dyspnea, palpitation
- Pelvic tumor may increase pressure on bladder, rectum and pelvic veins
- *Malpresentation*
- *non-engagement of presenting part*
- *Placenta Praevia* due to interference with implantation of fertilized ovum in the upper segment
- *Acute abdomen* ...-Red degeneration
  - torsion of pedunculated subserous fibroid
  - hemorrhage from ruptured surface vein
Fibroid with Pregnancy

- **Effect on Labor**
  - **Uterine Atony**... due to mechanical interference with uterine contractions:
    - Prolonged labor
    - Retained placenta
    - Postpartum Hemorrhage
  - Submucous fibroid increase incidence of placenta accreta and retained placenta
- **Obstructed labor**:  
  - Cervical fibroid  
  - Subserous fibroid impacted in the pelvis below the presenting part
Fibroid with pregnancy

- **Effect on Puerperium**
  - * Subinvolution
  - * Secondary Post partum hemorrhage (submucous or fibroid polyp)
  - * Inversion of the uterus may be caused by fundal submucous fibroid
  - * Increased incidence of puerperal sepsis due to infection of traumatized tumor and interference with drainage of uterus
Effect of pregnancy on Fibroid

- Increase size of fibroid due to hypertrophy and increased vascularity
- Softness of the tumor due to interstitial edema...flattening of fibroid and may become indistinct
- Subserous tumor may be readily palpated as the uterus enlarges and on occasion may be mistaken for fetal parts
- Submucous and fibroid polyp are more prone to infection specially in puerperium and after abortion
- Red degeneration is common leading to subacute or acute abdomen
- Torsion of pedunculated subserous fibroid is common in puerperium when there is rapid involution of uterus and laxity of abdominal wall leading to increased mobility of intra-abdominal organs
Management

- Follow-up
- Red degeneration with abdominal pain:
  - bed rest
  - reassurance
  - analgesics
- Torsion of subserous fibroid: surgery and removal of the stalk with fibroid ... no other interferences
- Caeserean section if fibroid causing obstruction to labor ... no interference with fibroid to avoid excessive bleeding and re-evaluate after 6 weeks
- Caeserean hysterectomy may be indicated with multiple fibroids in patient competed her family
Cancer cervix and Pregnancy

- The incidence of CIN varies but it is generally between 1% to 8% of abnormal cytology.

- Invasive cancer is the most common solid tumor during pregnancy

- Fortunately its incidence is 0.2% to 0.9% of all pregnancies. 1.4% of all cases of cancer cervix
Cancer Cx. with pregnancy

- Symptoms
- Usually asymptomatic, detected during routine Pap smear
- Vaginal bleeding and discharge may be mistaken for pregnancy complications
- Pelvic pain..less frequent
Cervical Screening During Pregnancy

- Cervical cancer peaks between age 30 to 49 years
- The mean age of pregnant women with invasive cervical cancer 31.8y.
- Significant numbers diagnosed in 2nd or 3rd trimester
- Efficacy and safety of screening is well-documented
Diagnosis during pregnancy

- Colposcopy is safe and well tolerated and should be used to evaluate abnormal Pap smear
- Any suspicious lesion should be biopsed
- The overall risk of biopsy-related complications is approximately 0.6% usually mild bleeding.
Diagnosis during pregnancy (cont.)

- Cervical conization during pregnancy is crucial in diagnosis and staging of MIC.

- Complications: Hemorrhage 2-13%

- Fetal loss 17%-50%, <10% in 2nd, 3rd

- *PMRM  *Preterm labor  *infection, laceration and stenosis  * Fetal Salvage 89-95%
Workup during pregnancy

- Physical examination
- Cervical biopsy
- Conization
- Chest x-ray with abdominal shield
- Since about 83% of cases are stage I, cystoscopy and proctoscopy are eliminated. Also, I.V.U and Enema.
Treatment of CIN during pregnancy

- No indications for immediate treatment of cases with CIN during pregnancy
- Pap smear and colposcopy every trimester
- Vaginal Delivery with higher rate of regression at 6-week examination compared to Caesarean delivery
- Definitive treatment...6 weeks postpartum
Treatment of invasive cancer during pregnancy

- Invasive cancer during pregnancy is curable
- Treatment is clear in the 1st and 3rd trimester but less clear in the 2nd trimester
- the two modalities used are surgery or Radiotherapy as in non-pregnant
T.T during pregnancy (cont)

- First trimester (1-12 weeks)

- Fetal salvage is not feasible in women receiving treatment for invasive cancer

- The maternal risk from delaying therapy until fetal maturity is excessive

- Surgery with the fetus in situ
T.T during pregnancy (cont)

- Second trimester (13-25 weeks)
- The period of greater uncertainty
- Fetal salvage is exceedingly rare with high neonatal mortality rate
- Delaying therapy for several weeks may subject the mother to the theoretical risk of disease progression
T.T 2nd trimester

- If patient elects to interrupt pregnancy.. The same as in 1st trimester
- If not ..define a target gestational age for fetal delivery
- Monitor by U/S..and MRI for tumor extension
- Documented lung maturity
3rd trimester Treatment

- Wait for few weeks till fetal maturity then apply definitive therapy

- Surgery in 89% may be coordinated with fetal delivery and completed as a 1-stage operation.

- If R.T..external beam immediately after delivery followed by intracavitary radiation
Ovarian tumors with pregnancy

- Incidence 1:1000 pregnancy
- Benign tumors are common e.g. luteal cyst and Dermoid cyst
- Malignant tumors 5%
  - Ovarian malignancy has no effect on pregnancy and pregnancy has no effect on prognosis of ovarian cancer
  - Benign cyst may undergo torsion causing acute abdomen commonly in puerperium
Ovarian Tumors with pregnancy

- Management of benign tumor
- First trimester: observe and follow-up with ultrasound till second trimester (to reduce risk of abortion) and then removal through laparotomy
- Second trimester: laparotomy
- Third trimester: Caesarean section and removal of tumor
- Malignant tumors: treated as non-pregnant i.e. surgical staging and cytoreductive surgery
THANK YOU