Hyperemesis gravidarum

Introduction

- **Nausea and vomiting in pregnancy** is extremely common Nausea and vomiting occurs in 50-90% of pregnancies
- **Hyperemesis gravidarum (HEG)** is the most severe form of nausea and vomiting in pregnancy.
- Begins by 9-10 weeks of gestation, peaks at 11-13 weeks, resolves in most cases by 12-14 weeks. N&V In 1-10% of pregnancies, symptoms may continue beyond 20-22 weeks

Hyperemesis gravidarum — is considered the severe end of the spectrum of nausea and vomiting accompanied by weight loss exceeding 5 percent of prepregnancy body weight and ketonuria unrelated to other causes Hyperemesis tends to improve in the last half of pregnancy, but may persist until delivery .

Morning sickness — some degree of nausea with or without vomiting occurs in 50 to 90 percent of all pregnancies five to six weeks of gestation, peaking at nine weeks, and usually abating by 16 to 18 weeks of gestation

MORNING SICKNESS vs HG?	
Morning sickness	**Hyperemesis gravidarum**
Little if any weight loss.	**Weight loss of 5-20lb or more (>5% of patient's pre-pregnancy weight).**
Nausea and vomiting do not interfere with the ability to eat or drink enough each day.	**Nausea and vomiting cause reduced food intake. Dehydration from vomiting can occur if not treated.**
Vomiting is infrequent. Nausea is episodic but not severe and may cause discomfort.	**Vomiting often, possibly with bile or blood if not treated. Nausea is usually moderate to severe and constant.**
Dietary and/or lifestyle changes are enough to help most of the time.	**Fluid hydration through a vein and/or medication to stop the vomiting will be required.**
Typically improvement is seen gradually after the first trimester, but nausea may remain at times for the duration of the pregnancy.	**Improvement usually seen by the middle of the pregnancy, but nausea and/or vomiting may continue until late pregnancy.**
Patient is able to work most days and care for family.	**Patient is likely to be unable to work for weeks or months, and may need help caring for herself.**

Etiology

- Hormonal changes
  - Raised levels of beta HCG (Human Chorionic Gonadotrophin)
  - High levels of estrogen and progesterone(hypersalivation; decreased gastric motility)
- Psychological------disproved
- Genetic component
- Infection Helicobacter pylori is a bacterium found in the stomach that may aggravate nausea and vomiting in pregnancy
- Subclinical vestibular disorders may account for some cases of hyperemesis gravidarum .

Risk factors

- Previous pregnancies with hyperemesis gravidarum
- Greater body weight
- Multiple gestations
- Trophoblastic disease
- Nulliparity
- female fetuses
- Advanced maternal age (age >35).

Diagnosis

- History Severe nausea and vomiting more than 3 or 4 times a day
- Food aversions
- Weight loss of 5% or more of pre-pregnancy weight
- Decrease in urination
- Dehydration Headaches Confusion Fainting Jaundice
- excessive salivation,
- fatigue, weakness, and dizziness.
- Patients may experience the following: Sleep disturbance , Depression Anxiety Irritability Mood changes Decreased concentration .

Complications

The most common complication :

- weight loss of up to 10%, associated with muscle wasting and constant lethargy.
- Malnutrition can result in thiamine (vitamin B1) deficiency, which may cause Wernicke's encephalopathy, characterized by nystagmus, diplopia, abnormal ocular movements, ataxia and confusion.
- Hyponatraemia (plasma sodium <120mmol/L) causes lethargy, seizures and respiratory arrest.
- Other vitamin deficiencies in HG include B12 and B6, causing anemia and peripheral neuropathy.

Treatment :

- Treatment According to the severity of the symptoms and signs
- Fluids and nutrition
- Non pharmacologic interventions
- Pharmacologic treatment
- TOP

Fluids and nutrition

- Hospitalization and IV hydration fluids: it is indicated when:
  - Pulse is >100 b/ m.
  - Blood pressure < 90/60 mm/Hg.
  - Temp > 38
  - Vomiting > 5 times / day

- Marked dehydration Ketonuria and protinuria Intravenous fluids (IV) – to restore hydration, electrolytes, vitamins, and nutrients

Non pharmacologic interventions :

- Dietary modifications: frequent small meals, shift to dry bland food, and avoid rich, fatty and spicy foods. Separate solid and liquid foods by at least 2 hours.
- Lifestyle changes: Avoid aromas of cooking, perfumes, and smoke. Better isolation from noise, and family members. Avoid anxiety, nervousness, and fatigue because it exacerbates vomiting.
- Avoidance of triggers
- Acupuncture and acupressure
- Ginger and peppermint
- Hypnosis
- Bed Rest –This may provide comfort .

Pharmacologic treatment :

- The American College of Obstetrics and Gynecology recommends that first-line treatment of nausea and vomiting of pregnancy should start with pyridoxine (vitamin B-6) with or without doxylamine.
- Pyridoxine has been found to be effective in significantly reducing severe vomiting but is less effective with milder vomiting. Pyridoxine in combination with doxylamine 10 mg, has been shown in randomized, placebo-controlled trials to have a 70% reduction in nausea and vomiting.
- If this is unsuccessful, adding or switching to PO, PR, or IV antiemetics may be required

- **Ondansetron (Zofran),** while pregnancy Class B, has become the most common parenteral and oral antiemetic used in US emergency departments due to its efficacy, and it has become the first choice in hyperemesis in the last several years
- It is a serotonin antagonist and is dose responsive.
- Starting dosage is 4 mg, either IV or PO, and that dose may be repeated every 15-30 minutes until symptoms improve.
- Other typical antiemetics such as **promethazine** 12.5-25 mg IV or PO every 4 hours or **prochlorperazine** 25 mg rectally every 12 hours are also acceptable second-line agents.

- Anticholinergics are supported by some data attesting to their safety, but they are not as well studied. **Meclizine** and **dimenhydrinate** have both been shown to be more effective than placebo in controlling nausea and vomiting of pregnancy. **Metoclopramide**, a promotility agent, has been demonstrated to be more effective than placebo in the treatment of hyperemesis gravidarum, and it has not been shown to be associated with increased incidence of congenital malformations.

- **Corticosteroids** have a possible benefit in the treatment of hyperemesis gravidarum.
- Steroids have been considered a last resort in patients who will require enteral or parenteral nutrition due to weight loss. The most common regimen is **methylprednisolone** 16 mg, orally or intravenously, every 8 hours for 3 days.

- Some recent studies have demonstrated an association between oral clefts and methylprednisolone use in the first trimester. The current recommendation is that corticosteroids be used with caution and avoided before 10 weeks' gestation.
- In addition to the medications mentioned, ginger is a common remedy for nausea and vomiting in pregnancy.
- Ginger capsules of 250 mg taken 4 times a day have been demonstrated to be effective against nausea and vomiting of pregnancy as well as hyperemesis when compared with placebo, without evidence of significant side effects or adverse effects on pregnancy outcomes

Termination of pregnancy(TOP) :

- Termination of pregnancy(TOP) It is indicated in sever complicated cases of HG with progressive weight loss and different organs impairment and not responding for above treatment lines