Hyperemesis Gravidarum

Patient diagnosed with nausea and vomiting of pregnancy:
- Consider ginger-containing foods or ginger 250 mg capsules PO QID
- Consider P6 acupressure wristbands (should be removed when sleeping)
- Vitamin B6 (pyridoxine) 25 mg PO TID as a single agent **or** in combination with Unisom (doxylamine) 12.5-25 mg PO TID[1] (Also available in combination tablets as Diclegis-- see box to right)

Diclegis10 MG-10MG Delayed Release (doxylamine/pyridoxine):
- May be costly depending on insurance coverage
- Start 2 tabs PO qhs; may add 1 tab PO q am and 1 tab PO q mid-afternoon (Max: 4 tabs/day); Give on empty stomach.

Persistent nausea and vomiting without dehydration

Add dopamine antagonist[2] (counsel on extrapyramidal side effects):
- Promethazine (Phenergan) 12.5-25 mg PO every 4 hrs, **or**
- Prochlorperazine (Compazine) 5-10 mg PO every 6-8 hrs, **or**
- Metoclopramide (Reglan) 10 mg PO every 6-8 hrs before meals

Consider adding acid-reducing agents (eg, antacids, H2 blockers, proton pump inhibitors)[2]

Persistent nausea and vomiting

Instruct patient to see provider for symptoms of:
- Lightheadness, dizziness, faintness, tachycardia, **or**
- Unable to keep food/fluids down for >12 hrs

Persistent vomiting after rehydration and IV antiemetic therapy **or** severe dehydration or abnormal electrolyte levels

Admit to hospital:
- NPO
- Pepcid for PUD prophylaxis 20 mg IV q12 hrs
- IV fluids: Tailor IVF choice to patients electrolyte and acid/base balance (Avoid use of dextrose in initial rehydration)
- If not already done: U/S for molar pregnancy, neck exam for goiter and clinical assessment of hyperthyroid symptoms (check TFTs only if signs/symptoms of hyperthyroidism)[3]

Prolonged vomiting >3 weeks

Yes → Check electrolytes and start thiamine 100mg IV qd x 2-3 days, along with electrolyte replacement[4]

No → Check electrolytes and replace as needed

Start alternating doses of:
- Prochlorperazine 10 mg IV, and
- Metoclopramide 10 mg IV every 3hrs[5]

If acute dystonic reaction

Cogentin 1-2 mg IV/IM stat and continue 1-2 mg PO bid for 48-72 hrs to prevent relapse

OR

Benadryl 50-100 mg IV/IM stat and 25-50 mg PO qid for 48-72 hrs to prevent relapse

Emesis continues after 24 hrs of therapy

Consider ondansetron (Zofran) as second line agent:
8mg IV over 15 min q 8hrs[6]

Emesis continues after 24 hrs of therapy

Add diazepam (Valium) 10mg IV q12hrs[7]

Emesis continues after 24 hrs of therapy

If >10 wks gestation
Add methylprednisolone 16 mg IV q 8 hrs x 2-3 days followed by two week taper (halving of dose q 3 days)[8]

Emesis continues after 24 hrs of therapy

Start enteral feeding via Dobhoff tube after dietary consult for caloric supplementation[9, 10]

Emesis continues after 24 hrs of therapy

- Consider Psychiatry consult for assessment of secondary gain issues
- Dietary consult for caloric supplementation
- Consider GI consult for J-tube[11] (via direct jejunal puncture bypassing stomach) and also assessment of H. pylori[12]

  Note: A G-J tube can be placed by Interventional Radiology, but sometimes the J portion of tube can reflux back up into stomach)

Emesis stops

- Start clear liquid diet for 24 hours
- Advance to low fat, bland, dry diet as tolerated
- Stop IV medication when diet is tolerated without nausea or vomiting
- Start patient on PO anitemetics in preparation for outpatient treatment
- Consider discontinuing outpatient regimen after 1 week from discharge

References

1. ACOG Practice Bulletin, Number 153, September 2015.
Nausea and vomiting of pregnancy affects 70-80% of pregnancies. Most patients will do well with outpatient treatment.

2. Smith J, Refuerzo J, Ramin S. Treatment and outcomes of nausea and vomiting of pregnancy. UpToDate. February 2017.

3. Broussard C, Richter J. Nausea and vomiting of pregnancy. Gastroenterology Clinic. 1998; 27:123-51.
Thyroid function abnormalities are transient and concurrent with HEG…whether these abnormalities represent true hyperthyroidism vs. a biochemical alteration of pregnancy has been questioned because T3 is not consistently elevated.

4. Association of Professors of Gynecology and Obstetrics. Nausea and vomiting of pregnancy. APGO Educational Series on Women's Health Issues. 2001.
Use Lactated Ringer's solution to correct hypovolemia. Large volumes of normal saline may cause hyperchloremic acidosis. Thiamine supplementation should be administered to anyone requiring IV hydration that has vomited for more than 3 weeks.

5. Association of Professors of Gynecology and Obstetrics. Nausea and vomiting of pregnancy. APGO Educational Series on Women's Health Issues. Washington, DC. 2001.
Combinations of antinauseant/antiemetic agents (H1-receptor antagonists and phenothiazines) are commonly used to treat NVP, but their anticholinergic properties may drowsiness, dry mouth/eyes, urinary hesitancy, and extrapyramidal effects.

6. Magee L, Mazzotta P, Koren G. Evidence-based view of safety and effectiveness of pharmacologic therapy for nausea and vomiting of pregnancy (NVP). Am J Obstet Gynecol. 2002; 186: S256-61.
No malformation was reported with first trimester exposure to ondansetron in a randomized controlled trial of first trimester patients. Compared with promethazine, ondansetron offered no benefits…. Its use should be reserved until other agents have failed.

7. Tasci Y, Demir B, Dilbaz S and Haberal A. Use of diazepam for hyperemesis gravidarum. J Matern Fetal Neonatal Med. 2009; 22(4):353-6.
The addition of diazepam to IV fluids is associated with less hospitalization and greater patient satisfaction.

8. Safari H, Fassett J, Souter IC, Alsulyman O, and Goodwin TM. The efficacy of methylprednisolone in the treatment of hyperemesis gravidarum: a randomized, double-blind, controlled study. Am J Obstet Gynecol. 1998; 179(4):921-4.
A short course of methylprednisolone is more effective than promethazine for the treatment of hyperemesis.

9. Hsu J, Clark-Glena R, Nelson D and Kim C. Nasogastric enteral feeding in the management of hyperemesis gravidarum. Obstet Gynecol. 1996;88: 343-6.
Enteral nutrition has less potential for serious complications than TPN (i.e. thrombosis, infection, pneumothorax, intrahepatic cholestasis, fatty infiltration of the placenta), and is substantially cheaper.

10. Stokke G, Gjelsvik B. Flaatten K, Birkeland E, Flaatten H, and Trovik J. Hyperemesis gravidarum, nutritional treatment by nasogastric tube feeding: a 10 year retrospective cohort study. Acta Obstet Gynecol Scand. 2015; 94:359-67.
Compared with other fluid/nutrition regimens, enteral tube feeding for women affected by severe hyperemesis gravidarum is associated with adequate maternal weight gain.

11. Saha S, Loranger D, Pricolo V, Degli-Esposti S. Feeding jejunostomy for the treatment of severe hyperemesis gravidarum: a case series. J Parental Enteral Nutr. 209; 33(5):529-34.
Feeding jujunostomy is a potentially safe and effective mode of nutritional support in hyperemesis gravidarum.

12. Erdem A, Arlan M, Erdem M, Yildirim G, Himmetoglu O. Detection of Helicobacter pylori seropositivity in hyperemesis gravidarum and correlation with symptoms. **Am J Perinatol 2002; 19: 87-92.** and **Jacoby E, Porter K. Helicobacter pylori infection and persistent hyperemesis gravidarum. Am J Perinatol. 1999;16: 85-8.**
Erdem found no direct causal relationship between H. pylori infection and HEG. Jacoby described successful treatment of 3 persistent HEG cases with clarithromycin and amoxicillin. However, consideration must be given to the possible harmful effects of clarithromycin in pregnancy, as well as a 2-5% rate of resistance of H. pylori.

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Notice to Users

These algorithms are designed to assist the primary care provider in the clinical management of a variety of problems that occur during pregnancy. They should not be interpreted as a standard of care, but instead represent guidelines for management. Variation in practices should take into account such factors as characteristics of the individual patient, health resources, and regional experience with diagnostic and therapeutic modalities.

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