

Guideline for Nausea and Vomiting of Pregnancy

Incidence:

Eighty percent of pregnant patients experience some degree of nausea and vomiting of pregnancy. Nausea and vomiting usually subsides after the first trimester. Rarely, patients may experience nausea and vomiting throughout the entire pregnancy.

Definition:

The term hyperemesis gravidarum is used to describe patients with severe symptoms of nausea and vomiting of pregnancy. A universally accepted definition of hyperemesis gravidarum does not exist. Severe symptoms typically include persistent vomiting unrelated to other causes, a measure of starvation (typically large ketonuria), and some degree of weight loss (typically 5% of pre-pregnancy weight).¹

Other objective findings such as electrolyte, thyroid or liver function abnormalities may be present.² Severe symptoms occur in 0.3-3% of all pregnancies.³

Etiology:

The pathogenesis of nausea and vomiting of pregnancy remains unclear. A number of theories exist including hormonal changes, abnormal gastrointestinal motility/milieu, genetic factors and psychological predisposition.⁴⁻⁷

Differential diagnosis:

Gastrointestinal disorders, genitourinary tract disorders, endocrinologic derangement, metabolic/neurologic disorders, drug toxicity and/or intolerance, and pre-eclampsia.

Some of the most common associations with severe nausea and vomiting of pregnancy are multiple gestations, molar pregnancy and thyroid dysfunction. The peak symptoms occur at 9 weeks and begin to subside, and in most cases, cease by 10 weeks in 30% of pregnant patients. By the time that 12 weeks is achieved 60% of the symptoms will have ceased and by 16 weeks 90% of pregnant patients will no longer have symptoms of nausea and vomiting of pregnancy.

Classification:

Nausea and vomiting of pregnancy has been classified as:

- Mild—meaning nausea only
- Moderate—meaning nausea and vomiting
- Severe—See above

Effect on pregnancy outcome:

Overall there is no adverse effect on birth weight. No significant association of hyperemesis gravidarum with congenital anomalies has been demonstrated.

There may be a modest increased risk in central nervous system defects and skeletal malformations. However, some of these defects may be related to treatment options for hyperemesis rather than the condition itself. The risk of miscarriage appears to be decreased by 30% in pregnant patients with hyperemesis. Finally, there is an increased risk of therapeutic abortion. It is estimated that 1.5% of therapeutic abortions are performed because of nausea and vomiting in pregnancy.

Differential diagnosis:

In general, symptoms that present after 10 weeks are usually due to other causes. Abdominal pain is not a prominent feature of nausea and vomiting. Fever is also not present in nausea and vomiting of pregnancy. Likewise headache is not characteristic of nausea and vomiting of pregnancy. An abnormal neurological exam suggests an alternative disorder. Biochemical hyperthyroidism can sometimes be seen with moderate to severe nausea and vomiting of pregnancy. However, a goiter is not a finding of nausea and vomiting of pregnancy.

Laboratory evaluation:

- TSH
- FT4
- TT4
- Ultrasound
- LFTs
- Amylase
- Lipase
- Electrolytes
- Magnesium

Unfortunately, abnormal labs in nausea and vomiting of pregnancy can confuse the diagnostic picture. In nausea and vomiting of pregnancy one can see elevated liver enzymes of less than 300 u per liter, elevated serum bilirubin less than 4 mg per dL, and elevated serum amylase up to 5 times greater than normal. Usually with primary hepatitis liver enzymes and bilirubin are much higher. Serum amylases are usually 5 to 10 times higher with acute pancreatitis. Thyroid stimulating hormone can be suppressed with nausea and vomiting of pregnancy.

An ultrasound evaluation should be performed to rule out multiple gestational or molar pregnancies. If the differential diagnoses are ruled out and nausea and vomiting begins prior to 10 weeks, the diagnosis of hyperemesis gravidarum can be made.

Management: (see flow diagram)

The patient needs to be reassured that nausea and vomiting of pregnancy:

1. Is usually transient
2. Peaks by 7-12 weeks
3. Subsides after the first trimester
4. Can usually be managed by lifestyle and dietary alterations.

First-line treatments:

- convert prenatal vitamin to folic acid only
- ginger capsules 250 mg QID
- eating frequent small amounts
- eating protein-predominant meals, low fat
- eating a bland dry diet (bread, crackers, etc)
- drinking small amounts of cold clear carbonated or sour liquids
- drinking between meals rather than with meals
- lying down as needed and getting plenty of rest
- changing positions slowly
- going outside for fresh air
- avoiding offensive foods and smells (food diary)
- avoid iron preparations
- brush teeth after eating

Alternative therapies:

Herbal teas containing mint and orange have been used for the treatment of nausea and vomiting of pregnancy. In general these remedies have not been well investigated.

Wrist acupuncture at the “P6” point on the inner aspect of the right wrist has been used to treat nausea and vomiting. Evidence to support this is limited. The use of hypnosis and psychotherapy has limited support in the literature.

Medical intervention:

Failure of appropriate pharmacological intervention often times leads to hyperemesis gravidarum. This has been demonstrated in many studies. There is no strong evidence that antiemetic treatment with standard listed medications for nausea and vomiting can result in congenital defects.

The following list of medications is thought to be safe.

- Antihistamines, which includes doxylamine, dimenhydrinate and cyclizine and hydroxyzine and meclizine.
- Dopamine antagonists such as chlorpromazine are also thought to be safe.
- Vitamin B6 pyridoxine is safe.
- Although less evidence exists, other agents such as ondansetron, and corticosteroids are also thought to be safe.
- Antacids and H2 receptor antagonists can be used safely.
- Although the experience with proton pump inhibitors is limited, there is no evidence to suggest any problems.
- Tapered steroids

Management of severe nausea and vomiting of pregnancy:

1. Intravenous hydration and correction of electrolytes (including magnesium).
2. The use of intravenous multivitamins for patients who have vomiting for 3 weeks or greater.
3. Enteral nutrition via nasogastric tube

4. Parenteral nutrition as a last resort in patients with potential for severe maternal morbidity.

In most cases the nausea and vomiting should subside within 24-48 hours of IV hydration.

References:

1. Goodwin TM, Montoro M, Mestman JH, Pekary AE, Hershman JM. The role of chorionic gonadotropin in transient hyperthyroidism of hyperemesis gravidarum. *J Clin Endocrinol Metab* 1992;75:1333–7.
2. American College of Obstetricians and Gynecologists Practice Bulletin No. 189: Nausea and Vomiting of Pregnancy, January 2018.
3. Matthews A, Haas DM, O’Mathúna DP, Dowswell T. Interventions for nausea and vomiting in early pregnancy. *Cochrane Database of Systematic Reviews* 2015, Issue 9.
4. Simpson SW, Goodwin TM, Robins SB, Rizzo AA, Howes RA, Buckwalter DK, et al. Psychological factors and hyperemesis gravidarum. *J Womens Health Gen Based Med* 2001;10:471–7.
5. The role of chorionic gonadotropin in transient hyperthyroidism of hyperemesis gravidarum. AU Goodwin TM, Montoro M, Mestman JH, Pekary AE, Hershman JM SO *J Clin Endocrinol Metab*. 1992;75(5):1333.
6. Nausea and vomiting of pregnancy. Lee NM, Saha S *Gastroenterol Clin North Am*. 2011;40(2):309.
7. Buckwalter JG, Simpson SW. Psychological factors in the etiology and treatment of severe nausea and vomiting in pregnancy. *Am J Obstet Gynecol* 2002;186: S210–4

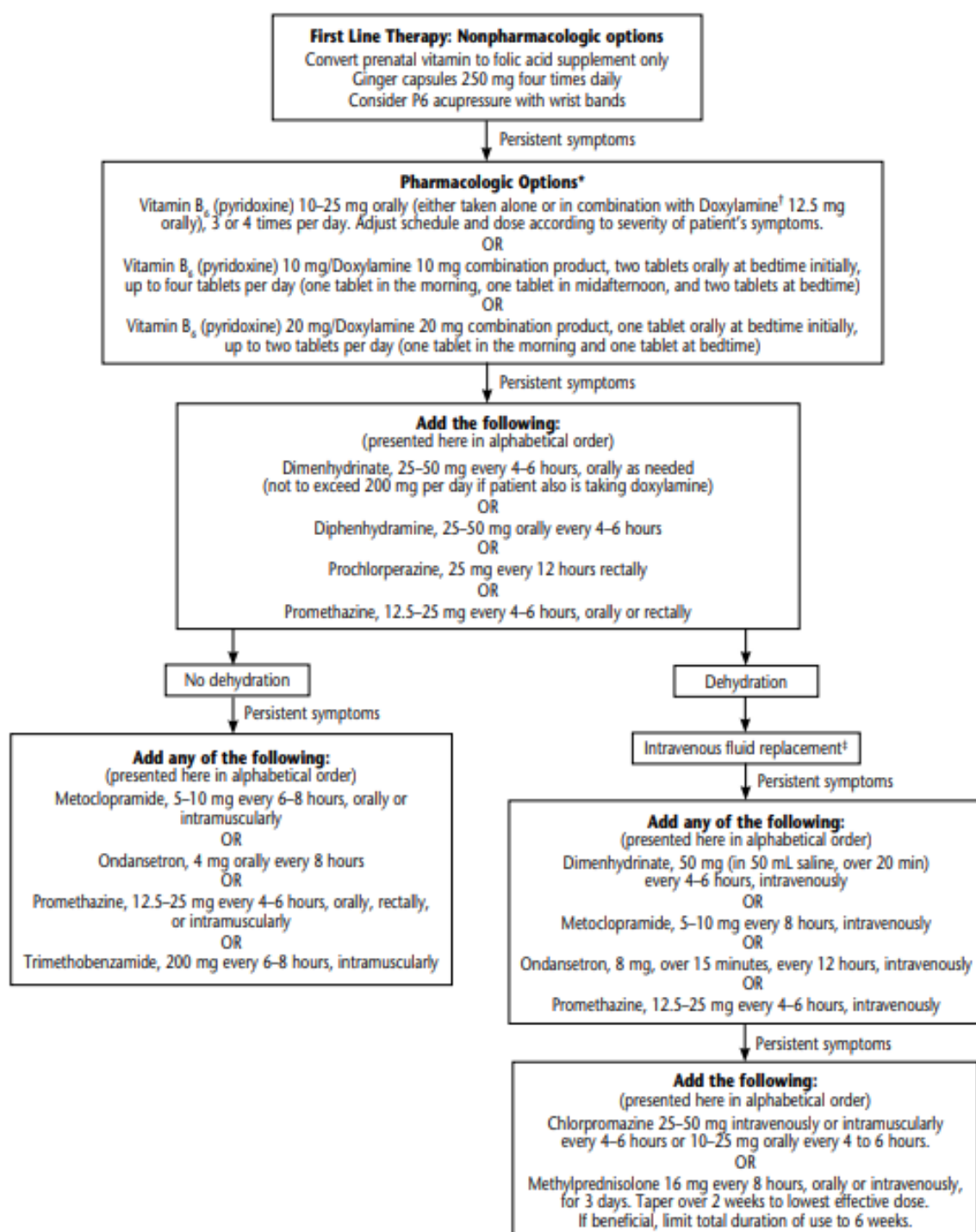


Figure 1. Algorithm of therapeutic treatment of nausea and vomiting of pregnancy (if no improvement, proceed to next step in algorithm). This algorithm assumes other causes of nausea and vomiting have been ruled out. At any step, consider enteral nutrition if dehydration or persistent weight loss is noted. *Some antiemetic medications have only been approved by the U.S. Food and Drug Administration for use in nonpregnant patients; however, off-label use is common. Obstetricians and other obstetric care providers should counsel patients and document such discussions accordingly. Care should be exercised if multiple antiemetic medications are used simultaneously. Parallel use of some medications (see text) may result in an increased risk of adverse effects. [†]In the United States, doxylamine is available as the active ingredient in some over-the-counter sleep aids; one half of a scored 25-mg tablet can be used to provide a 12.5-mg dose of doxylamine. [‡]Thiamine, intravenously, 100 mg with the initial rehydration fluid and 100 mg daily for the next 2–3 days (followed by intravenous multivitamins), is recommended for women who require intravenous hydration and have vomited for more than 3 weeks to prevent a rare but serious maternal complication, Wernicke encephalopathy. (Modified from Levichek Z, Atanackovic G, Oepkes D, Maltepe C, Einarson A, Magee L, et al. Nausea and vomiting of pregnancy. Evidence-based treatment algorithm. *Can Fam Physician* 2002;48:267–8, 277.) ←