Maine Medical PARTNERS Women's Health

A department of Maine Medical Center

Guideline for Nausea and Vomiting of Pregnancy

Incidence:

Eighty percent of women 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 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 the most common associations with severe nausea and vomiting of pregnancy are multiple gestation, 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 women. By the time that 12 weeks is achieved 60% of the symptoms will have ceased and by 16 weeks 90% of the women will no longer have nausea and vomiting of pregnancy.

Classification:

Nausea and vomiting of pregnancy has been classified

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

Effect on pregnancy outcome:

Overall there is no adverse affect on birth weight. There appears to be a significantly low risk of congenital heart disease in pregnancies complicated by severe hyperemesis.

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 women 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 so that pain that is not proportionate to the nausea and vomiting may suggest an intraabdominal cause. 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 is usually;

1. Transient
2. Peaks by 7-12 weeks
3. Subsides after the first trimester
4. It 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 antonagonist such as chlorpromazine are also thought to be safe.
- Vitamin B6 pyridoxine is safe.
- Although less evidence exists, other agents such as ondansetron, and cortical steroids 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 women 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 Gend 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.

Prior to confirmed pregnancy/prevention

All women of childbearing potential are recommended to take a multivitamin with folic acid once daily.

With confirmed pregnancy

Assess symptoms of nausea/vomiting

NVP (mild cases)
Re-assess daily until well-controlled

NVP (moderate cases) to HG
Re-assess every 8 hours until well-controlled

Non-pharmacological interventions

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Pharmacological interventions

Persistent NVP/HG

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Diet changes

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Lifestyle Modifications

Complementary/ alternative therapies (CAM)

Vitamin B6 (pyridoxine) 10–25 mg orally (either taken alone or in combination with Doxylamine† 12.5 mg orally), 3 or 4 times/day.
OR
Vitamin B6 (pyridoxine) 10 mg/Doxylamine 10 mg combination product, two tablets orally at bedtime initially, up to four tablets per day (one tablet in the morning, one tablet in midafternoon, and two tablets at bedtime)

Convert prenatal vitamin to folic acid only
Eat small, frequent meals
Eating a blander diet
Avoid spicy foods
Avoid fatty foods
Avoid strong odorous foods
Consuming fluids frequently and in small amounts
Consuming cold clear carbonated or sour liquids
Eating protein predominant meals and snacks

Frequent naps
Changing positions slowly
Fresh air
Avoiding offensive foods and smells

Acupressure

±

Herbal supplements

P6 bands

Ginger 250 mg capsules PO four times a day

Persistent NVP/HG

Add the following:
(presented here in alphabetical order)
Dimenhydrinate, 25–50 mg every 4–6 hours, orally as needed (not to exceed 200 mg per day if patient also is taking doxylamine)
OR
Diphenhydramine, 25–50 mg orally every 4–6 hours
OR
Prochlorperazine, 25 mg every 12 hours rectally
OR
Promethazine, 12.5–25 mg every 4–6 hours, orally or rectally

Persistent or NVP/HG with dehydration

Persistent NVP/HG without dehydration

IV fluid replacement with correction of electrolytes
Normal saline (0.9% sodium chloride) ± Thiamine, 100 mg IV or IM daily decreased to 50 mg daily ± Potassium chloride, 40 mEq/L of normal saline with maximum dose of 10 mEq/h titrated to maternal potassium levels

+

Add any of the following:
(presented here in alphabetical order)
Metoclopramide, 5-10 mg every 6-8 hours, orally or intramuscularly
OR
Ondansetron, 4 mg orally every 8 hours
OR
Promethazine, 12.5-25 mg every 4-6 hours, orally, rectally, or intramuscularly
OR
Trimethobenzamide, 200 mg every 6-8 hours, intramuscularly

Persistent NVP/HG

Add any of the following:
(presented here in alphabetical order)
Dimenhydrinate, 50 mg (in 50 mL saline, over 20 min) every 4-6 hours intravenously
OR
Metoclopramide, 5-10 mg every 8 hours intravenously
OR
Ondansetron, 8 mg, over 15 minutes, every 12 hours, intravenously
OR
Promethazine, 12.5-25 mg every 4-6 hours, inravenously

Resolution of NVP/HG

Persistent NVP/HG

Resolution of NVP/HG

Discontinue antiemetics and monitor

Add the following:
(presented here in alphabetical order)
Chlorpromazine 25-50 mg intravenously or intramuscularly every 4-6 hours or 10-25 mg orally every 4 to 6 hours
OR
Methylprednisolone 16 mg every 8 hours, orally or intravenously, for 3 days. Taper over 2 weeks to lowest effective dose. If beneficial, limit total duration of use to 6 weeks.

Enteral nutrition via nasogastric tube

Parenteral nutrition if nasogastric tube is not tolerated