

**Hyperemesis**  
November 4, 2017

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**Hyperemesis Definition**

Extreme nausea and vomiting of pregnancy resulting in dehydration, electrolyte imbalance, ketonuria and weight loss\*

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**Hyperemesis Incidence**

- ▶ 55-90% of women experience SOME nausea or vomiting in pregnancy
- ▶ 0.3-3.6%

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**Hyperemesis Impact**

- ▶ Most common indication for hospitalization during first half to pregnancy and only 2<sup>nd</sup> to preterm labor
- ▶ Associated with preterm delivery and SGA infants

Maternal complications can include:

- ▶ Psychosocial
- ▶ Decision for pregnancy termination in otherwise desired pregnancy
- ▶ Severe Dehydration: ATN and increased risk of thrombosis
- ▶ Esophageal tear
- ▶ Wernicke encephalopathy

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**Hyperemesis Risk Factors**

- ▶ Multifetal pregnancies
- ▶ Molar pregnancies
- ▶ Fetal female gender
- ▶ History in prior pregnancy
- ▶ Maternal family history
- ▶ Young (< 30) first time moms at greater risk
- ▶ Women with nausea and vomiting related to:
  - Estrogen based meds
  - Motion
  - migraine headaches
- ▶ Patients who did NOT take a multivitamin before

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**Hyperemesis Etiology**

- ▶ Estrogen?
- ▶ Progesterone?
- ▶ Decreased Motility?
- ▶ Hcg?
- ▶ H. Pylori?

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### Diagnosis of Hyperemesis

- ▶ Clinical diagnosis
- ▶ Persistent vomiting with weight loss, ketonuria unrelated to other causes

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### Hyperemesis Differential Diagnosis

- Gastrointestinal**
  - ▶ Gastroenteritis, biliary tract dz, Hepatitis, appendicitis, PUD, pancreatitis, obstruction
- Genitourinary**
  - ▶ Pyelonephritis, stones, torsion, degenerating fibroids
- Metabolic**
  - ▶ DKA, Hyperthyroidism, Addison's Disease, Hyperparathyroidism
- Neurological**
  - ▶ Migraines, pseudotumor cerebri, vestibular lesions
- Pregnancy related**
  - ▶ Preeclampsia
  - ▶ Acute fatty Liver
- Other**
  - ▶ Drug toxicity

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### Hyperemesis Work Up

- Work Up**
  - ▶ Vitals including weight and orthostatics
  - ▶ Ultrasound
  - ▶ UA
  - ▶ BUN/Creatinine
  - ▶ Electrolytes
  - ▶ CBC w diff
  - ▶ LFTs

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Hyperemesis Findings

- ▶Electrolyte abnormalities
- ▶Leukocytosis
- ▶Hemoconcentration
- ▶Abnormal Liver function
- ▶Hyperthyroidism

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Hyperemesis Non-Pharmacologic Treatment

- ▶Prevention: multivitamin
- ▶Avoidance of Triggers
- ▶Frequent small meals
- ▶High protein snacks/meals
- ▶Fluids

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Hyperemesis Non-Pharmacological, continued

- ▶Ginger
- ▶Acupressure
- ▶Acupuncture

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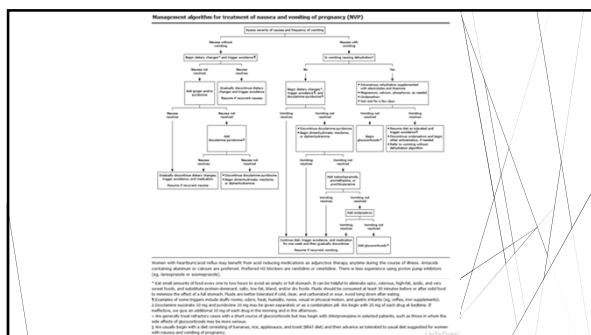
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**Hyperemesis Pharmacologic treatment**

Vitamin B6: 10-25mg q 6-8 hours

Vitamin B6 + Doxylamine

- ▶ Bendectin 1958: Vit B6, Dicyclomine and doxylamine
- Bendectin 1976: Vit B6 and doxylamine
- Removed from market 1983 secondary to litigation with claims of birth defects
- ▶ Reapproved by FDA 2013 as Diclegis 10mg Vit B6, 10 mg doxylamine
- ▶ November 2016: Bonjesta

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**Hyperemesis Pharmacologic Treatment**

2<sup>nd</sup> line antihistamines:

- ▶ Diphenhydramine
- ▶ Meclizine
- ▶ Dimenhydrinate

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**Hyperemesis Pharmacological Treatment**

3<sup>rd</sup> line Treatment  
Dopamine Receptor Antagonists

- ▶ Metaclopramide (Reglan)
- ▶ Promethazine (Phenergan)
- ▶ Prochlorperazine (Compazine)

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**Hyperemesis Pharmacologic Treatment: Zofran**

Zofran

- ▶ More effective than Vit B6 + doxylamine in controlling nausea and vomiting
- ▶ Side effect: drowsiness, headache, constipation
- ▶ Can prolong QT interval
  - ▶ Esp with hypokalemia, hypomagnesemia, underlying cardiac conditions
  - ▶ Use with concomitant medications that can prolong QT interval

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**Meds that should NOT be used with Zofran**

- ▶ Antihistamines (hydroxyzine)
- ▶ Analgesics (methadone, oxycodone)
- ▶ Diuretics
- ▶ Anticholinergics
- ▶ Antiarrhythmics
- ▶ Tricyclic and tetracyclic antidepressants
- ▶ Macrolide antibiotics (azithromycin)
- ▶ Trazodone
- ▶ Fluoxetine
- ▶ Flagyl
- ▶ HIV inhibitors

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### Zofran

- ▶ Safety Data is limited and conflicting
- ▶ Possible association with cleft palate
- ▶ Possible association with cardiac anomalies
- ▶ Other studies show no increase in adverse effects

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### Hyperemesis, Steroids

- ▶ Possible reduction in readmission
- ▶ Possible association with cleft palate/lip
- ▶ Most common: methylprednisolone
  - ▶ Begin 48mg daily oral or IV x 3 days
  - ▶ If no improvement in 3 days - STOP
  - ▶ If improvement → taper over 2 weeks
  - ▶ If recurrent, may continue tapered dose x 6 weeks

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### Hyperemesis, KPOC Home Health Option

- ▶ Outpatient Order placed for Home Health Referral placed
- ▶ Home infusion pharmacy will deliver supplies and meds
  - ✦ Case management can assist arranging
- ▶ Patient and family is taught self administration of IV fluids, Meds
- ▶ RN come out q 3 days for IV change

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**Hyperemesis  
When to Admit?**

- ▶ Those refractory to outpatient treatment
- ▶ Change in vital signs
- ▶ Change in mental status
- ▶ Continued weight loss

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**Hyperemesis, Parenteral Nutrition**

- ▶ Cannot tolerate oral liquids for a prolonged period or significant clinical dehydration or continued weight loss
- ▶ Enteral feeding before Parenteral

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**Hyperemesis in Summary**

<b>Prevent:</b> MVI before conception	<b>Moderate Symptoms:</b> <ul style="list-style-type: none"><li>▶ Vitamin B6 + doxylamine</li><li>▶ Antihistamines</li><li>▶ Reglan/Phenergan</li><li>▶ Zofran</li></ul>
<b>Mild Symptoms:</b> <ul style="list-style-type: none"><li>▶ Avoidance of triggers</li><li>▶ Ginger</li><li>▶ Vitamin B6</li><li>▶ Antihistamines</li></ul>	<b>Severe Symptoms:</b> <ul style="list-style-type: none"><li>▶ Zofran</li><li>▶ Steroids</li></ul>

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### References

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- ▶ American College of Obstetricians and Gynecologists. Practice Bulletin Summary No 153: Nausea and vomiting of Pregnancy. *Obstet Gynecol*. 2015;126(3): 687-688.
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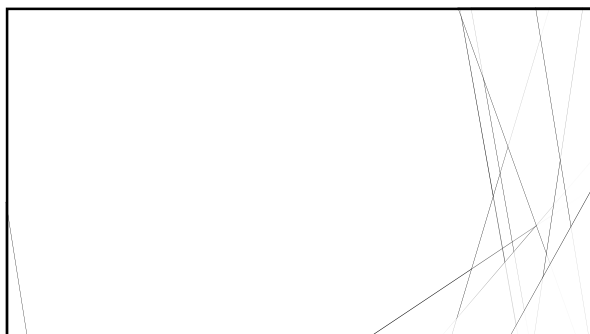
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