

Hyperemesis Gravidarum Patient Treatment Overview

Patient Reference for HER Treatment Algorithm



HG symptoms are caused by multiple triggers, so multiple medications are usually needed.



Goals of treatment are to increase fluid and food intake and daily functioning.



Medications will not relieve all symptoms but should help you reach these goals.

Treatment steps build on each other. Start at Step 1 or 2, then consider adding medications as needed.

i HG is severe nausea and/or vomiting in pregnancy.

See HER Foundation tools for more info hyperemesis.org/tools.

! Take only one medication from each category at a time.

! DISCUSS THIS WITH YOUR HEALTHCARE PROVIDER BEFORE MAKING ANY CHANGES TO YOUR MEDICAL CARE. !

This is not a substitute for a medical consultation. Medication use requires an assessment of risks and benefits. The medications in this Overview have low risk of fetal harm and benefits outweigh the risks in HG. Increasing medication dose is unlikely to increase risks but may increase side-effects.

STEP 1: PREP

3-6 months before conception.

Prepare with suggested supplements below.

Supplements

Consider taking all of the following:

- B Complex** twice daily (minimum 10 mg B1, 10 mg B6) or B-100 once daily
 - Prenatal multivitamin** daily including minimum:
 - › Folic acid/folate 600 mcg
 - › Phosphatidylcholine 450 mg
 - › Iron 25 mg (ferrous bisglycinate often better tolerated).
- » Take additional supplements as needed to reach above doses.

Optional Supplements

- Vitamin D with vitamin K** daily (minimum 2000 IU of D)
- Calcium with Magnesium Glycinate**, approximately 200 mg each, twice daily

i Important Information **!** Caution
Medications in *italics* are prescription only.

STEP 2: ONSET

Immediately upon onset of nausea and/or vomiting symptoms.

i Take vitamin B1 (**Benfotiamine**) 100 mg daily **AND** vitamin B6 100 mg daily, plus other supplements from Step 1 as tolerated.

Supplement Adjustments

If not tolerating supplements from Step 1, consider these daily:

- Change to iron-free prenatal or take smaller amounts of prenatal multivitamin when manageable.
 - Add individual supplements to reach doses listed in Step 1: vitamin D drops or pills, phosphatidylcholine, iron, and folic acid.
- i** Daily vitamin B1 (**Benfotiamine**) is most important.

+ ADD

Acid reducer

Famotidine (Pepcid) 20-40 mg at bedtime if acid reflux symptoms

+ ADD

B6/Doxylamine

Consider ONE of these Vitamin B6 plus Doxylamine Combinations.

- Vitamin B6 (Pyridoxine)** 25 mg plus **Doxylamine (Unisom)** 12.5 mg every 6 hours **OR**
- Diclegis/Diclectin** Take three times daily (two pills before bed, one pill in morning, one pill in afternoon) **OR**
- Bonjesta** 20 mg twice daily (one pill in morning and one before bed)
 - » Continue B6 supplement up to 100 mg daily if tolerated.
 - » Each option has different effects and side-effects.

i If these are not available or tolerated, and/or symptoms do not improve, switch to one of the antihistamine options in Step 3.

! Limit total amount of vitamin B6 to 150 mg per day.

STEP 3: MILD

If symptoms partly reduce food and fluid intake.

i Continue vitamin B1 (**Benfotiamine**) 100 mg daily plus other supplements as tolerated.

Option A: If symptoms are worsening rapidly and/or food or fluid intake is less than half of normal amount, continue **B6/Doxylamine** or switch to **ONE** antihistamine below and **MOVE** immediately to Step 4. ➔

Option B: If symptoms are mild and food/fluid intake is more than half of usual amount, but an alternate antihistamine is preferred, **STOP B6/Doxylamine** Combination and

1. Add **Famotidine (Pepcid)** 20 mg daily at bedtime (add 20 mg in the morning as needed) to prevent nausea and damage from vomiting, reflux, and acid irritation,
2. Increase **B6** supplement to 150 mg daily if tolerated, and
3. Add **ONE** of the following antihistamines:

Antihistamines

- A. Diphenhydramine (Benadryl)** 25–50 mg four times daily **OR**
B. Dimenhydrinate (Dramamine / Gravol) 25-50 mg four times daily **OR**
C. Meclizine 25 mg three times daily (*less drowsy*) **OR**
D. Cyclizine 25 mg three times daily
- » Choose based on availability.
 - » Start with a lower dose and increase as needed.

HG Facts

- » Symptoms may worsen throughout the first trimester, making it difficult to know how effective each medication is, so adding rather than changing medications is recommended.
- » HG symptoms often continue until midpregnancy in 40% and until term in about 20%.

STEP 4: MODERATE TO SEVERE

If symptoms greatly reduce food and fluid intake.

i Increase vitamin B1 (**Benfotiamine**) to 250 mg daily after 20 weeks pregnant and continue other medications and supplements as tolerated.

i If not tolerating or responding to medications in this step, request non-pill forms (oral dissolving, rectal, vaginal, transdermal patch, compounded, IV, or subcutaneous infusion by a pump).

+ ADD medications below as needed.



oral dissolving tablets



subcutaneous infusion



transdermal patch



compounded medications

4A: Acid Irritation

Acid Blocker/PPI (Proton Pump Inhibitor) Options

STOP Acid Reducer (Famotidine)

- A. Esomeprazole (Nexium)** 20-40 mg **OR**
B. Lansoprazole (Prevacid) 15-30 mg (Available as ODT/oral dissolving tablet) **OR**
C. Pantoprazole (Protonix) 40 mg
- » Choose based on availability.
 - » Take daily at bedtime even if no acid reflux.
 - » May take up to 3 days to reach full effectiveness.
- i** If PPI is not sufficient, acid reducer can be added in the morning with PPI at bedtime.
i Daily PPI is recommended to prevent nausea and damage from vomiting, reflux, and acid.

4B: Nausea

Dopamine Antagonists

- A.** For general nausea: **Promethazine (Phenergan)** 12.5-25 mg every 4-6 hours (pill, suppository) **OR**
B. If nausea/vomiting triggered by eating/fullness: **Metoclopramide (Reglan)** 2.5-10 mg before meals or every 6-8 hours (pill, oral dissolving, IV, subcutaneous). **!** If IV, infuse over 15+ minutes.
- !** These may not be taken simultaneously.
 - !** Avoid taking for more than 12 weeks.
 - i** Consider starting at a lower dose to minimize side-effects and increase dose if needed.
 - i** See section 4D for IV vitamins as they can be helpful (esp. **thiamin/B1**) to further reduce nausea.

4C: Vomiting

Serotonin Antagonists

- A. **Ondansetron (Zofran)** 4-8 mg every 3-6 hours (pill, oral dissolving, ODT vaginal, IV) or subcutaneous (max 32 mg per day)
⚠ Medication effects last only 6 hours. **OR**
- B. **Granisetron:**
- › **Kytril** 1 mg every 12 hours (pill, IV) **OR**
 - › **Sancuso** patch (3.1 mg)
- ⚠ Take only ONE serotonin antagonist.
⚠ Take on a **strict** schedule.
i Each has different effects and side-effects.
i These are minimally effective for nausea.

Bowel Care

Use to prevent and treat constipation, especially when taking serotonin antagonists.

1. Take **ONE** of these daily as directed.
 - a. **Docusate (Colace)** **OR**
 - b. **Magnesium citrate** **OR**
 - c. **Polyethylene glycol (MiraLAX)**
 2. Add **ONE** as needed (at a different time of day).
 - ⚠ Avoid taking daily.
 - a. **Senna (Senokot)** **OR**
 - b. **Bisacodyl (Dulcolax)** **OR**
 - c. **Glycerin suppository**
- ⚠ Consult provider if pre-existing bowel issues.

4D: Dehydration/Malnutrition

IV fluid options as needed or on a schedule.

- If dry mouth/lips, dark/infrequent urine, dizziness.
- A. **Banana Bag** (fluids + vitamins) with **B Complex**, **OR**
- B. **Normal Saline** (NS) or **Lactated Ringer's** (LR) with **multivitamin IV** and **thiamin (B1) IV** 100 mg and **B Complex IV**.
- ⚠ If IV fluid has D5 (5% dextrose), ensure **thiamin** 200 mg IV per bag is given before or with dextrose.
⚠ Infuse very slowly over at least 2 hours.
i IV vitamins, esp. B vitamins, are very important and reduce complications and possibly nausea.
i Consider midline IV or PICC (Peripherally-Inserted Central Catheter) if multiple IV's per week.
» Request electrolyte blood testing.
» Ask about home and outpatient clinic infusions.

Nutrition

- If weight loss is ongoing and more than 7% of pre-pregnancy weight, consider nutrition via a feeding tube (tube from the nose to stomach) or IV nutrition (TPN or Total Parenteral Nutrition).
- ⚠ Tube feedings are not recommended when vomiting frequently.
⚠ When starting nutrition, close monitoring for at least a week is important due to Refeeding Syndrome.
⚠ Risks of IV and TPN (IV nutrition) can be reduced with excellent care of line and dressing.

4E. Extra Options if Symptoms Persist

- ⚠ Less commonly given due to unclear research or possible side effects.
- A. **Mirtazapine (Remeron):** Discontinue other serotonin antagonists.
- B. **Methylprednisolone:** If 9+ weeks pregnant.
- C. **Prochlorperazine (Compazine) OR Chlorpromazine (Thorazine):** Discontinue other dopamine antagonists.

If symptoms persist, contact the HER Foundation for additional guidance.

Follow the Rule of 2's when reducing medications upon symptom improvement. Wean each medication in 2nd trimester or later, after 2 weeks with minimal symptoms, over 2+ weeks.

Kimber's RULE OF 2'S

Wean medications for HG:



Wean each medication
in 2nd trimester or later

After 2 weeks with
minimal symptoms

Over
2+ weeks

DISCLAIMER: THIS SHOULD NOT BE CONSIDERED MEDICAL ADVICE. USE THIS RESOURCE TO UNDERSTAND OPTIONS. DO NOT MAKE ANY CHANGES TO YOUR LIFESTYLE OR MEDICAL CARE BEFORE CONSULTING WITH YOUR HEALTHCARE PROVIDER.

NAUSEA/VOMITING OF PREGNANCY ALGORITHM

(HELP <20)

1. B6/Pyridoxine 10–25 mg PO with or without Doxylamine 10-25 mg 3 or 4 times per day. (Either separately or as delayed release combination.)
2. Thiamin/Benfotiamine 100 mg PO 1-3 times per day. (250 mg daily PO minimum after 20 weeks)
3. Continue prenatal vitamin if tolerated or change to single vitamins (B1, B9, D with K, Ca, Mg).
4. Add gastric/esophageal protection at bedtime with onset of vomiting or poor intake. (See shaded box below.)



DEHYDRATION?



(HELP ≥32) ↓

Add up to 1 from each class:

1. Antihistamine (discontinue doxylamine)
 - *Dimenhydrinate* 25-50 mg q 4–6 hours PO or PR (limit to 200 mg per day if taking doxylamine)
 - *Diphenhydramine* 25–50 mg PO q 4–6 hours
 - *Meclizine* or *Cyclizine* 25 mg PO q 6-8 hours
2. Dopamine Antagonist (Use only 1 at a time or alternate.)
 - *Metoclopramide* 2.5-10 mg q 6-8 hours PO or ODT
 - *Promethazine* 25 mg q 4-6 hours PO or PR (avoid IM/IV)
 - *Prochlorperazine* 5-10 mg q 6-8 hours PO or 25 mg twice daily PR



Add scheduled bowel care option(s) and serotonin antagonist (strict schedule, NOT prn):

1. Bowel Care: Daily stool softener, magnesium (citrate, oxide), polyethylene glycol + stimulant laxative or enema up to 3x per week prn.
2. *Ondansetron* 4-8 mg q 3-6 hours PO or ODT, or ODT given vaginally (max 32 mg per day) **OR**
3. *Granisetron* 1 mg q 12 hours PO or 3 mg TD patch (give 1 mg oral/IV dose on days 1 and 2 until steady state)
NOTE: Monitor EKG if risk of QT prolongation.



Consider NUTRITION (see box on right) and one of the following:

1. *Mirtazapine* 15 mg q 8 hours PO or ODT (Dose not established for HG. Discontinue other serotonin antagonists.)
2. *Methylprednisolone* (if 9+ weeks) 16 mg q 8 hours PO or IV for 3 days. Taper over 2 weeks. Maintain on lowest effective dose if needed. Avoid administration exceeding 6 weeks.
3. *Chlorpromazine* 25–50 mg IV or 10–25 mg PO q 4-6 hours

GERD or gastric/esophageal protection options:

1. Calcium antacid (avoid Aluminum, Bismuth or Bicarbonate)
2. H2 antagonist BID: *famotidine* 20-40 mg PO
3. Proton Pump Inhibitor (PPI) q 24 hours at bedtime
 - *esomeprazole* 20-40 mg PO or IV
 - *lansoprazole* 15-30 mg PO or ODT
 - *pantoprazole* 40 mg PO or IV

IMPORTANT NOTES:

1. If symptoms persist, follow arrows to next level of care and consider non-oral forms of medications such as compounded, transdermal, IV, or SubQ. ALWAYS wean medications very slowly.
2. After IV therapy, use non-oral options or move slowly to oral medications as tolerated.
3. Most medications can cause QT prolongation, consider EKG or cardiac monitoring for high risk patients, high doses of medications, multiple medications, or electrolyte & vit B1 abnormalities.
4. Intramuscular injections (IM) not recommended due to muscle atrophy and pain sensitivity.
5. Dehydration and nutrient (e.g. electrolytes, B1) deficiencies decrease treatment response.
6. Start prophylactic anticoagulation if prolonged immobility or hospitalization over 72 hours.
7. Weaning too early or rapidly may result in worsening or refractory symptoms.
8. See less common medications on the HER Foundation website: www.hyperemesis.org/meds.
9. HELP = HyperEmissis Level Prediction Score. Learn more: www.hyperemesis.org/tools.

IV fluids and dilute vitamins; infuse slowly:

1. NS or LR + MVI + B1 + B Complex (B1, B2, B3, B6, B9)
 - Add prn: KCl, Na, vit D, Zn, Se, Fe, Mg & Ca.
 - Always give 200 mg B1 with IV dextrose (prevent WE).
 - Slowly replace low/marginal electrolytes (prevent CPM).
 - Consider restricted PO intake for 24-72 hours (gut rest).
 - Consider midline or central line for frequent IVs.
2. **Always include Thiamin 100-500 mg IV 3 times daily.**
3. Choose MVI containing vitamin K or add vitamin K prn.



If oral meds ineffective or not tolerated, change to ONE OF THE FOLLOWING with daily Bowel Care (see box on left):

1. *Ondansetron*:
 - IV: 4-8 mg over 15 minutes q 3-6 hours (up to 32 mg) or continuous infusion
 - Subcutaneous (SubQ) continuous infusion: 8 mg starting dose, then 12-40 mg/day; wean slowly to PO if stable
 2. *Granisetron* 1mg q 12 hours IV or continuous infusion or TD
- If symptoms continue, add one or both of these meds:**
1. *Dimenhydrinate* or *Diphenhydramine* 25-50 mg q 4–6 hours IV
 2. *Metoclopramide*:
 - IV: 2.5–10 mg q 8 hours SLOW infusion
 - SubQ continuous infusion: 2.5-10 mg loading dose, then up to 60 mg/day

*** Wean IV/SubQ to PO very slowly when stable, then monitor for at least 24 hours before discharge to home.**

NUTRITION - If weight loss ≥7% and/or persistent HG:

1. Consult with GI & Nutrition & IV access team.
2. Prevent Refeeding Syndrome: Very slowly restart nutrition & closely monitor weight, cardiac rhythm and electrolytes (especially phosphate) for 1+ week.
3. Consider EN/PN until gaining weight on PO intake.
 - *Enteral nutrition*: Gradually increase infusion (after resting GI tract) with or without additional parenteral/enteral fluids. (NJ or G/J-tube preferred). Insert SMALL bore nasal tube under sedation. Often poorly tolerated.
 - *Parenteral nutrition (partial peripheral or total central)*

Disclaimer: This is not medical advice. Do not change your diet, treatment or lifestyle without consultation from your medical provider.



HER
Foundation

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