Hyperemesis Gravidarum Management Protocol

REHYDRATE METHODICALLY
Banana Bag + B vitamins (B1, B6)
Myer’s Cocktail + 1 ampule MVI + folic acid
D5NS + 1 ampule MVI + 100 mg thiamin + folic acid
*Add: vit K, vit D, zinc, selenium, iron, magnesium and calcium prn

IMPLEMENT COMPASSIONATE CARE
Women with HG are miserable for months and their concerns and requests should be taken seriously. Every possible comfort measure should be taken to minimize unnecessary suffering. Compassionate and effective treatment prevents therapeutic termination, and influences if she and baby will suffer from physical and psychological complications (e.g. trauma, organ damage) during pregnancy and long-term.

PRESCRIBE ANTIEMETIC MEDICATIONS
Choose a drug targeting the main triggers (e.g. motion). If numerous triggers, and/or more severe symptoms, consider serotonin antagonists. Multiple meds may be needed simultaneously throughout pregnancy. Be proactive and aggressive early in pregnancy if she has a history of HG. See tiered medication list below.

PREVENT OR TREAT ADDITIONAL ISSUES
Issues: ptyalism, GERD, encephalopathy, gastroparesis, UTI, insomnia, h-pylori, cholestasis, debility, embolus
Medication side effects: severe constipation, serotonin syndrome, anxiety, headache, extrapyramidal symptoms

UTILIZE HER FOUNDATION RESOURCES
Share HER Foundation brochures/packet and support information (hyperemesis.org/info), use HELP Score and HER HG Assessment & Management Clinical Tools (hyperemesis.org/tools). Support: GetHelpNow@HelpHER.org.

INPATIENT CARE
> Weigh every 1-2 days
> Use comfort measures
> Rehydrate: IV Fluids + MVI + B complex/thiamin IV + electrolytes (treat mild deficiency)
> Consider midline or central/PICC line
> Begin Enteral/Parenteral Nutrition
> Labs: Nutritional panel, electrolytes, urinalysis
> Consults: Nutrition, PT, GI, home health, IV team
> D/C: Intake >1 meal/day + adequate fluid intake OR nutritional therapy + no ketones; maintaining or gaining weight

HOME CARE
> Weigh Monday/Wednesday/Friday
> Complete HELP Score daily
> Daily Enteral/Parenteral Nutrition OR IV Fluids + MVI + B complex/thiamin IV & electrolytes (see rehydration instructions above)
> Weekly Labs if TPN: CMP, electrolytes
> D/C: Intake ≥ 2 meals/day + adequate oral fluids + no ketones

OUTPATIENT CARE
FIRST VISIT
> Establish compassionate rapport
> R/O: hydatiform mole (GTD), gall bladder & pancreatic disease, helicobacter pylori, hyperthyroidism
> Labs: Urinalysis, hormone levels, comprehensive metabolic panel (CMP), thyroid panel

EACH VISIT
> Assess with HELP Score & HER Assessment Tools
> Try prenatal with food or iron-free as tolerated
> Weigh at least weekly & trend % weight loss
> Labs prn dehydration: electrolytes, CMP, u/a, ketones
> Encourage active oral care (e.g. water flosser) & eval
> Evaluate & treat additional symptoms (see above)
> Check WE signs (esp. if infusing glucose)
> Refer for consults & adjunctive care
> Diet: Encourage healthiest food tolerated, add thiamin 50 mg PO BID/TID if high carbohydrate diet
> Review medications for tolerance/side-effects
> Monitor thiamin & vitamin K & electrolyte needs

2nd & 3rd TRIMESTER
> Labs: thyroid panel, iron, CMP
> PT consult: weakness/atrophy, birth prep
> Use alternate for Glucola (GTT), e.g. jelly beans, juice

Is patient: Eating ≤ 1 meal per day? Dehydrated? Losing ≥ 2lbs (1 kg)/week? Not responding to Rx?

YES

NO

see page two for more detailed instructions
Hyperemesis Gravidarum Management Protocol

### WE/ODS ESSENTIALS
- **Causes:** Thiamin & electrolyte deficiency/shifts, infection, diuretics
- **Signs:** ∆ in vision or speech or gait or mental status, abdominal pain, headache, cardiac symptoms, somnolence, dizziness, weakness, aphasia, tremor, irritability, spastic paresis, seizure, myalgia, myoclonus, anorexia, dysphagia, elevated transaminase
- **Prevention:** oral/IV thiamin ≥ 50 mg 1-3x daily; continue postpartum
- **Acute Care:** Thiamin 100 mg IV up to 1000 mg/day until asymptomatic
- **Diagnosis:** MRI
- **Result:** Maternal & fetal morbidity (pre-eclampsia, SIDS), or mortality
- **Onset:** acute (e.g. IV glucose or electrolytes) or gradual/chronic

WE=Wernicke’s encephalopathy
ODS=Osmotic Demyelination Syndrome

### TPN/TPPN ESSENTIALS
- **Prevent Refeeding Syndrome**
- **Add MVI + folic acid + B Complex + Phosphorus + Mg + Vit D & K + Ca**
- **Labs/CMP weekly**
- **Strict adherence aseptic technique & management protocol**
- **Red flags:** chest pain, shortness of breath, temp ≥ 101 F (38.3 C) or ≤ 96.8 F (36 C), redness/swelling/rash

### ENTERAL ESSENTIALS
- **Prevent Refeeding Syndrome**
- **Check vitamin K & thiamin dose**
- **NG/NJ:** Use pediatric tube; slow rate
- **May need extra IV or fluid boluses**

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**Kimber’s RULE OF 2’S**

Wean medications for HG:

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<th>∆ = Change</th>
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<td>* Prophylaxis with antihistamines for anxiety; monitor for extrapyramidal symptoms &amp; neuroleptic malignant syndrome</td>
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**CONSULTS/ADJUNCTIVE CARE**
- Consults: GI, nutrition, home health, psychology (PTSD), perinatology/MFM
- Adjunctive care: hypnosis, acupuncture, homeopathy, osteopathic adjustment

**PATIENT/FAMILY EDUCATION**
- Daily: HELP Score, ketostix
- Call if significant ∆ in HELP Score
- Coping for psychosocial & debility
- Red flag signs: hemataemesis, rapid weight loss, ∆ in breathing or gait or vision or mental status, fever, chills, chest pain/arrhythmia, somnolence, oliguria, fainting, severe pain

**POSTPARTUM SUPPORT**
- Psych: Trauma/PPD support
- Nutrition: Thiamin + prenatal
- Evals: PT, thyroid, GI prn nausea

**HG FACTS**
- Genetic links to IGFBP7 & GDF15 & RYR2 (cyclic vomiting syndrome)
- Diagnosis: dehydration, poor nutrition, weight loss, debility
- Fetal loss rate: 34%
- Termination rate: 15%
- Maternal Complications: atrophy, esophageal tear/rupture, organ rupture/failure, deconditioning, pneumomediastinum, gall bladder dysfunction, fatty liver, neurological disease, retinal hemorrhage, GI ulcer, premature labor & delivery, PTSD, rhabdomyolysis, severe dental damage, death
- Child Outcomes: IUGR, sensory & emotional & neurodevelopmental & behavioral disorders, vitamin K deficient embryopathy, stillbirth