



# Nausea in pregnancy

## It's not just morning sickness

BY PATRICIA NGUYEN, BSC, ALON SHRIM, MD,  
ADRIENNE EINARSON, RN AND GIDEON KOREN, MD

Almost 80% of pregnant women experience some degree of nausea and vomiting of pregnancy (NVP). The most severe form is known as hyperemesis gravidarum (HG) and affects approximately 1% of pregnant women. HG can cause dehydration, significant weight loss or electrolyte imbalance. NVP should be treated symptomatically to prevent progression to HG and avoid hospitalization, allowing women to continue with their daily activities. Although there's wide evidence of fetal safety with several antiemetic agents, women and health professionals are often reluctant to use medications due to a heightened misperception of teratogenic risk.

*Patricia Nguyen is currently a graduate student (MSc candidate) of Gideon Koren, MD. She is a trained counsellor on the Nausea and Vomiting of Pregnancy (NVP) hotline at Motherisk at The Hospital for Sick Children (Sick Kids), Toronto.*

*Alon Shrim, MD, is an obstetrician doing a fellowship at Sick Kids.*

*Adrienne Einarson, RN, is the assistant director of the Motherisk program at Sick Kids.*

*Gideon Koren, MD, is the director of the Motherisk program.*

### Initial actions

- rule out or treat other medical conditions causing nausea and vomiting
- eliminate or minimize aggravating factors — e.g. give antacids for heartburn

### Clinical presentation

- onset: 4-7 weeks of pregnancy
- peak: around 10-12 weeks, but can persist throughout entire pregnancy
- “morning” sickness may occur in the afternoon, evening or at any waking hour
- isolated nausea, vomiting, retching or dry heaves; or a combination of these symptoms
- associated with dizziness, fatigue and a lack of energy, all of which may result from the experience of NVP, including lack of sleep
- other complaints: difficulty swallowing
- certain odours, tastes or activities (i.e. brushing teeth) will evoke nausea, gagging or vomiting

### Etiology

#### Different investigators have proposed several causes of NVP:

- changes in levels of gestational hormones — i.e. human chorionic gonadotropin excess, progesterone deficiency
- chronic infection with *Helicobacter pylori*
- gastrointestinal (GI) tract dysfunction, e.g. gastric dysrhythmias

### Aggravating factors

- certain pungent or volatile odours — e.g. cooking foods, perfumes, cigarette smoke
- GI symptoms — heartburn, constipation
- some prenatal multivitamins
  - tablet size can make swallowing difficult
  - iron content may upset the stomach or cause constipation
- insufficient levels of certain vitamins (i.e. B<sub>6</sub>)
- GI conditions — e.g. Crohn's disease, ulcerative colitis, peptic/duodenal ulcers, or celiac disease — in these cases, nausea and vomiting might be a consequence of the medical condition, not the pregnancy

### Non-treatment consequences

- maternal weight loss
- dehydration
- electrolyte imbalance
- hospitalization or emergency room visits
- inability to function domestically, socially or occupationally
- elective termination of pregnancy

### Non-pharmacologic therapy

- Large amounts of food at any one time are discouraged. Small portions — even one or two bites — should be eaten every 1-1.5 hours, avoiding anything spicy or fried.
- Stomach should not remain empty, especially at bedtime, to reduce NVP interruptions of sleep and prevent nausea upon waking.
- Hydration is important, sipping liquids throughout the day. Large drinks, if any, should be consumed 30 minutes before or after eating.
- Nutrition is not a concern until NVP is controlled — whatever can be tolerated should be consumed. For added nutrition, introduce protein bars or liquid supplements.
- Ginger and ginger products — try candies, tea, ginger pills.
- Vitamin supplement — consider an alternative type, perhaps in liquid or chewable form.
- Acupressure wrist bands have been found to ease motion sickness and may minimize nausea.

### Pharmacologic treatment

- doxylamine/pyridoxine
  - found to be safe and effective (Koren G, Maltepe C. *J Obstetrics and Gynaecology* 2004;24[5]:530-3)
  - combines vitamin B<sub>6</sub> with the antihistamine doxylamine succinate
  - delayed release for up to 8 hours
  - dosage: 4 tablets a day — 2 at bedtime, 1 in the morning and 1 in the afternoon — has been most effective
  - may be taken for a few days to determine optimal dosage and timing — if NVP doesn't improve or worsens, the dosage can be increased to a maximum of 8 tablets per day
  - can't be used with persistent vomiting — control first with dimenhydrinate rectal suppositories taken 30 minutes before
  - should be continued at least until the end of the first trimester; once NVP symptoms resolve, women can gradually wean off the medication

#### For more severe and persistent NVP, a trial of antiemetics is a possible option. In order of proof of fetal safety:

- chlorpromazine — 10-25 mg every 4-6 hours orally (po) or as an intramuscular injection (IM)
- prochlorperazine — 5-10 mg every 6-8 hours (po/IM)
- promethazine — 12.5-25 mg every 4-6 hours (po/IM) — can be taken in lieu of dimenhydrinate prior to taking doxylamine/pyridoxine
- metoclopramide — 5-10 mg every 8 hours (po/IM)
- ondansetron — 8 mg every 12 hours — a recent Motherisk study of pregnant women who took this drug indicated that the percentage of birth defects fell within the 1-3% baseline risk (Einarson A et al. *BJOG* 2004;111[9]: 940-3.)