

301 Hyperemesis Gravidarum

Definition/Cut-off Value

Hyperemesis Gravidarum (HG) is defined as severe and persistent nausea and vomiting during pregnancy which may cause more than 5% weight loss and fluid and electrolyte imbalances (1). This nutrition risk is based on a chronic condition, not single episodes. HG is a clinical diagnosis, made after other causes of nausea and vomiting have been excluded.

Presence of condition diagnosed, documented, or reported by a physician or someone working under a physician's orders, or as self-reported by applicant/participant/caregiver. See Clarification for more information about self-reporting a diagnosis.

Participant Category and Priority Level

Category	Priority
Pregnant Women	I

Justification

Nausea and vomiting are common early in gestation; 50-80% or more of pregnant women experience some vomiting. However, pregnant women diagnosed with HG are at risk of weight loss, dehydration, ketonuria, and electrolyte imbalances such as hypokalemia. HG affects approximately 0.3-3.0% of pregnancies and may lead to adverse fetal consequences and hospitalization in some cases. HG is the second most common reason for hospitalization for pregnant women, with preterm labor being the most common (2).

Risk Factors for HG

Biological, physiological, psychological and sociocultural factors are thought to be influential in HG (3). The various risk factors for HG include maternal underweight, multiple pregnancy, nulliparity, previous history of HG and trophoblastic disorders (see clarification). A history of eating disorders, such as anorexia nervosa or bulimia, is also a risk factor associated with HG (4, 5). *Helicobacter pylori* infection may be a contributing factor for HG (6). Studies indicate that offspring or siblings of women with HG, and/or women pregnant with a female fetus, have increased chances of having HG. A history of motion sickness and/or migraine headaches are also risk factors for HG (7).

Various hormones such as estrogen, progesterone, adrenocorticotrophic hormone, cortisol, growth hormone, prolactin and human chorionic gonadotropin (HcG) play an influential role in HG. Increased levels of HcG, which may occur in molar (see clarification) or multi fetal pregnancies may be associated with HG. Studies indicate that HG increases when HcG level reaches its peak at 9 weeks of gestation (8). It should be noted that thyroid function is affected in pregnancy. For pregnant women with hyperthyroidism, decreased levels of thyroid stimulating hormone may be implicated for HG (9, 10).

HG and Adverse Maternal Outcomes

HG can adversely affect maternal outcomes and, if inadequately managed, can lead to malnutrition, dehydration, electrolyte imbalances, thrombosis, and Wernicke's encephalopathy (a very rare but potentially life-threatening complication of HG, caused by thiamine deficiency) (11). Vitamin K deficiency has also been reported with HG and may be implicated in neonatal hemorrhage (12). Other serious

complications include esophageal rupture (caused by severe vomiting), peripheral neuropathy, coagulopathy and Mallory-Weiss syndrome (acute increase in esophageal pressure due to vomiting) (8).

Studies indicate that pregnant women with HG in the second trimester are also at an increased risk for placental disorders, such as placental abruption (13). Pregnant women with HG are at an increased risk for any autoimmune disorder, and in extreme cases this may lead to organ damage manifesting as oliguria and abnormal liver function tests (14). In addition, pregnant women with HG are at increased risk for psychological distress therefore leading to an increased risk for depression and anxiety (15). Other concerns associated with HG include severe distress, social dysfunction and loss of time from work (16, 17).

Malnourishment may develop over a period of time in women suffering with HG, which may lead to refeeding syndrome (RFS). RFS includes severe metabolic abnormalities and electrolyte disturbances due to the change from catabolic to anabolic metabolism that occurs when refeeding (orally, parentally, or enterally) occurs too quickly after severe malnourishment. RFS requires multidisciplinary nutrition team management as it is a life-threatening condition (18).

HG and Adverse Birth Outcomes

Systematic review and meta-analysis indicate that HG is frequently associated with adverse birth outcomes (19). Women with HG have an increased risk of giving birth to low birth weight, small for gestational age, and premature infants (20). Infants born to mothers suffering from HG have increased risk of colic, irritability, and growth restrictions (21). There is a scarcity of data examining the long-term effect on fetuses exposed to HG in utero. However, some studies indicate that there is an increased risk of psychological disorders and reduced insulin sensitivity for infants born to women with HG (22, 23)

Implications for WIC Nutrition Services

WIC nutrition staff can provide the following nutrition services to women with HG:

- Refer to a health care provider for appropriate monitoring and treatments as necessary.
- Provide education on how to recognize symptoms of dehydration such as: Increased thirst, dry mouth, low urine output or urine that is darker in color than normal.
- Offer suggestions to help with nausea such as:
 - Avoid foods and smells that seem to trigger nausea (e.g., fried or greasy foods, spicy foods, foods of a certain texture).
 - Eat crackers or dry cereal before getting out of bed to curb nausea in the morning.
 - Avoid large fluid intakes in the morning. Drink liquids between meals instead of with meals.
 - Choose foods carefully. Select foods that are high in carbohydrates or protein, low in fat, and easy to digest. Salty foods are sometimes helpful, as are foods that contain ginger — such as ginger lollipops. Avoid greasy, spicy and fatty foods. Consume foods that settle the stomach and calm the nausea. (24)
 - Eat several small meals throughout the day instead of three large meals. Meals should contain more carbohydrate than fat and acid. Protein-rich meals also decrease symptoms. Lighter snacks, including nuts, dairy products, and beans, are recommended. (25)

- Take prenatal supplement at night or before bedtime.
- Review weight gain goal and weight gain pattern. If weight loss is a problem, discuss nutrient and calorie-dense food choices and refer to the health care provider.
- Encourage women to take prenatal vitamins if considering becoming pregnant again. Studies indicate that taking prenatal vitamins a month before conception may help alleviate the symptoms of HG during pregnancy (26).

Clarification

Self-reporting of a diagnosis by a health care provider should not be confused with self-diagnosis, where a person simply claims to have or to have had a medical condition without any reference to professional diagnosis. A self-reported medical diagnosis (“My doctor says that I have/my son or daughter has...”) should prompt the CPA to validate the presence of the condition by asking more pointed questions related to that diagnosis.

Gestational Trophoblastic Disease (GTD) may be defined as a condition in which a tumor develops in the uterus that would normally develop as a placenta. Molar pregnancy or a hydatidiform mole may be classified as a form of noninvasive tumor under GTD. A molar pregnancy results from an abnormal fertilization of the egg lacking in maternal tissues. It should be noted that although the tumor is considered benign they have potential to become malignant. The symptoms include vaginal bleeding, hyperemesis, preeclampsia, and hyperthyroidism. (27)

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