Guideline for the Management of Hyperemesis Gravidarum

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<tr>
<th>Equality Impact Assessment</th>
<th>Outcome Level (high, medium, low)</th>
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<td>Low</td>
<td>Review date February 2013</td>
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1. **Introduction**
At least 50% of women experience nausea and vomiting in pregnancy, particularly in the first trimester. Hyperemesis Gravidarum (HG) is defined as persistent vomiting in pregnancy, which causes weight loss (more than 5% of body mass) and ketosis. It affects 0.1 – 1 % of pregnant women.
In severe cases of HG, if inadequately or inappropriately treated hyperemesis may cause Wernicke's encephalopathy, central pontine myelinolysis and maternal death (Lewis & Drife 1998)
Infants of mothers with severe HG have a higher incidence of IUGR (Intrauterine Growth Restriction) and are significantly smaller at birth (Vilming et al 2000)

2. **Clinical Features**
- Nausea and vomiting usually begin between weeks 5 to 8 and peak severity is around week 11. In 90% of women these symptoms have resolved by week 16.
- Hyperemesis is diagnosed when nausea and vomiting become so severe that dehydration and weight loss occurs.
- The woman is unable to maintain adequate hydration, and fluid and electrolyte as well as nutritional status are jeopardised.
- There may be ptyalism (inability to swallow saliva) and spitting.
- There are often signs of dehydration with postural hypotension and tachycardia.

3. **Investigations**
- Urinalysis: ketonuria and increased specific gravity
- U & Es: Hyponatraemia (low sodium), Hypokalaemia (low potassium), Low serum urea
- FBC: Raised haematocrit
- LFTs: Raised aminotransferase i.e. ALT and AST (50 –200U/L), Raised bilirubin. Frank jaundice is rare(Orazi et al 1998)
- Urine microscopy & culture to exclude UTI
- Pelvic USS: To exclude molar or multiple pregnancies.

4. **Abnormal thyroid function tests (TFT) (Gestational Thyrotoxicosis)**
- May be a feature in about 60% of women with HG
- The picture is of biochemical rather than clinical hyperthyroidism (Raised T4 and suppressed TSH)
- The abnormal TFTs is self-limiting (resolves as the hyperemesis improves) and does not require treatment (Goodwin et al 1992)
- However, TFTs provide a useful index of severity of HG, which correlates with the degree of biochemical hyperthyroidism (Asakura et al 2000)
- On very rare occasions Graves' disease may present for the first time in early pregnancy and may cause vomiting (Clinicians should be alert to symptoms predating the pregnancy)
5. Diagnosis

Hyperemesis is a diagnosis of exclusion as there is no single confirmatory test. Therefore it is necessary to consider the following as contributing to the diagnosis:

- Vomiting beginning for the first time after 12 weeks gestation should not be attributed to hyperemesis.
- Other cause of nausea and vomiting must be considered, most commonly UTI, and more rarely Addison’s disease (insidious onset with some features predating the pregnancy), peptic ulceration, pancreatitis, cholecystitis, Appendicitis and small bowel obstruction (abdominal pain is not a prominent symptom in hyperemesis). Other causes are hepatitis, Diabetic Keto-Acidosis (DKA), Uraemia, Thyrotoxicosis, Hyperparathyroidism and Drug induce (Iron supplemenation, Antibiotics).
- Hyperemesis tends to recur, so a previous history makes the diagnosis more likely.
- HG is more common in women with a past history of eating disorder.

6. Complications

- Mallory-Weiss tears of the oesophagus and haematemesis
- Profound weight loss (10 – 20% of body weight) and muscle wasting and consequent weakness.

- **Wernicke’s encephalopathy**: due to vitamin B1 (thiamine) deficiency is characterised by diplopia, abnormal ocular movements, ataxia and confusion. Severe cases may progress to korsakoff psychosis. Wernicke’s encephalopathy is associated with fetal death in 40% of cases.
- Hyponatraemia (plasma sodium less than 120mmol/l) causes lethargy, seizures and respiratory arrest.
- Other vitamin deficiencies: occur in hyperemesis, including cynocobalamin (vitamin B12) and pyridoxine (vitamin B6) causing anaemia and peripheral neuropathy.
- Thrombosis: since hyperemesis results in dehydration and is usually associated with bed rest, it constitutes a risk factor for thromboembolism.
- Psychology: certain problems may pre-date the onset of hyperemesis, but others result from the condition itself. Requests for TOP should not be assumed to indicate or confirm that the pregnancy was not wanted, but rather this should be an indication of the degree of desperation felt by the patient.

7. Management/Admission and Rehydration

- Any woman unable to maintain adequate hydration particularly if ketotic should be admitted to hospital.
- Any drugs that may cause nausea and vomiting, e.g. iron supplement should be temporarily discontinued.
• Adequate and appropriate fluid and electrolyte replacement is the most important component of management. Therefore the first-line treatment of HG includes IV fluid therapy with Normal saline or Hartmann’s solution.

**NOTE:** There is no place for the use of double-strength saline (2n saline), as this results in too rapid a correction of serum sodium with the risk of central pontine myelinolysis. Solutions containing dextrose (e.g. dextrose saline, 5% dextrose etc) should be avoided because they do not contain enough sodium and may precipitate Wernicke’s encephalopathy.

Fluid and electrolyte regimens must be adapted daily and titrated against serial (sometimes daily) measurements of serum sodium and potassium
Each litre bag of fluid should be given over 2 – 6 hours.

8. Thiamine therapy
Routine thiamine supplementation is advisable for all women admitted with HG to prevent Wernicke’s encephalopathy. Women admitted with a diagnosis of hyperemesis have usually been vomiting for at least 1 – 2 weeks prior to admission.

If the woman is able to tolerate tablets, give thiamine hydrochloride tablets 50 mg t.d.s (three times daily). For those unable to tolerate tablets, IV (intravenous) treatment is given as thiamine 100mg diluted in 100ml of saline and infused over 30 – 60 minutes. The I.V preparation is only required weekly (ONCE A WEEK). Pabinex IM/IV (multivitamin injection).

Treatment (as opposed to prevention) doses of thiamine in established Wernicke’s encephalopathy are much larger.

9. Thromboprophylaxis
Any pregnant woman, including those with HG, with prolonged dehydration or bed rest should receive thromboprophylaxis (e.g. enoxaparin 40mg/daily) and wear thromboembolic deterrent stockings.

10. Anti-emetics
Anti-emetics should be offered to women failing to respond to IV fluids and electrolytes alone (correction of electrolyte imbalance and rehydration).

Possible regimens include:

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<tr>
<th>Medication</th>
<th>Dosage</th>
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<tr>
<td>Cyclizine</td>
<td>50mg tds</td>
<td>Oral, IM, IV</td>
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<tr>
<td>Promethazine</td>
<td>25mg nocte</td>
<td>Oral</td>
</tr>
<tr>
<td>Prochlorperazine (stemetil)</td>
<td>5mg tds</td>
<td>Oral or PR IM</td>
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<tr>
<td></td>
<td>12.5mg tds</td>
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<tr>
<td>Metoclopramide (maxolon)</td>
<td>10mg tds</td>
<td>Oral, IM, subcutaneous, IV</td>
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<tr>
<td>Chlorpromazine</td>
<td>10-25mg tds</td>
<td>Oral IM</td>
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**Note:** If symptoms do not improve, the anti-emetic should be prescribed and given regularly rather than on an ‘as required’(prn) basis.
Phenothiazines (chlorpromazine, Prochlorperazine) and Metoclopramide can cause extrapyramidal effects and oculogyric crises. **Emergency treatment for both conditions is Procyclidine 5mg IM or IV**

Histamine-receptor blockers (ranitidine, cimetidine) and the proton-pump inhibitor (omeprazole) are used in cases where dyspeptic symptoms accompany the nausea and vomiting of hyperemesis.

There is no reported increase teratogenic risk with standard antiemetic drugs. Ondansetron is effective in some women but reports of its use are limited. It has been used in intractable hyperemesis either alone or with corticosteroids.

**11. Severe Hyperemesis**

Symptoms may persist if antiemetics have not been given on a regular basis or discharge home is premature. In some women vomiting may continue beyond 20 weeks.

Severe refractory hyperemesis is difficult to treat. There is data suggesting that corticosteroid therapy may produce a dramatic and rapid improvement (Safari et al 1998; Nelson-Piercy et al 2001). An initial regimen of hydrocortisone 100mg b.d, IV followed by oral prednisolone 40mg daily; which is then reduced slowly to a maintenance dose of between 5 – 10mg daily by 20 weeks gestation.

**NOTE**: The decision to commence steroid therapy must be sanctioned at Consultant level. Often in these cases the prednisolone has to be continued for many weeks and in extreme cases until delivery.

**12. Equality Impact Assessment**

Procedures undertaken as a consequence of compliance with this guideline are deemed intimate with some groups and therefore need to be sensitively handled. There may be an impact on religion, race/equality and gender groups with regards to the issue of a same sex provider. There may be an inequality in meeting patient choice for male or female members of staff. Every effort will be taken to meet the specific requirements of the patient in relation to the gender of the member of staff who assists them.

Where communication difficulties exist ‘Alternative formats available on request’ (e.g. translation services, sign language services, induction loop).
References


