Guidelines for the Management of Hyperemesis Gravidarum

A Clinical Guideline

<table>
<thead>
<tr>
<th>For Use in:</th>
<th>Obstetrics and Gynaecology</th>
</tr>
</thead>
<tbody>
<tr>
<td>By:</td>
<td>Clinical staff</td>
</tr>
<tr>
<td>For:</td>
<td>Management of Hyperemesis Gravidarum</td>
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<td>Claire Wells, Kelly French, Michelle Drolet, Bryony Tomlinson</td>
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This is a Controlled Document

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Background

Nausea and vomiting in pregnancy (NVP) affects up to 80% of pregnant women and is one of the most common indications for hospital admission among pregnant women. It typically starts between the 4-7th weeks of pregnancy, peaks around 9th week, and resolves by the 20th week in 90% of women. Rule out other causes if first presentation is after 10 completed weeks of pregnancy.

This condition is known as hyperemesis gravidarum which can be defined as intractable vomiting associated with loss of more than 5% of pre pregnancy weight, dehydration, electrolyte disturbances, or need for hospital admission. There is a high risk of recurrence in subsequent pregnancies. Consider diabetic ketoacidosis as an alternative diagnosis in a ketotic woman with diabetes.

Risk factors and associations:

- First pregnancy
- Multiple pregnancy
- History of severe nausea and vomiting in previous pregnancies, motion sickness, or nausea with oral contraceptive use
- Gestational Trophoblastic disease (GTD), including molar pregnancy
- History of migraines
- History of first degree relative with NVP
- Obesity
- Stress
- Being seropositive for Helicobacter pylori

The condition spontaneously resolves in the vast majority of patients and complications are rare.

Complications

- Weight loss
- Electrolyte imbalance
- Abnormal LFTs
- Abnormal TFTs
- Central pontine myelinolysis (CPM)
- Wernicke’s encephalopathy
- Other vitamin deficiencies (± megaloblastic anaemia), such as B12 or B6
- Venous thromboembolism (VTE)
- Adverse pregnancy outcomes including low birth weight, and increased risk of preterm delivery
- Adverse effect on quality of life and mental health
- Mechanical complications including Mallory-Weiss tears, retinal haemorrhage
HARP Criteria

Patients that fulfil the criteria should be commenced on the integrated care pathway (ICP) pathway.

- Ketones of 2 or more
- No complications ie: weight loss, deranged bloods
- Consideration of past medical history and comorbidities
- Patient compliance

History

Quantify severity
To exclude other causes: abdominal pain, urinary symptoms, infection, drug history

Examination

Undertake an examination as per the ICP pathway. Includes basic observations, weight, abdominal examination, signs of dehydration, urine output, and other examination as guided by history.

Investigations:

On admission all patients require:

- Urine dipstick to quantify ketonuria
- MSU to exclude UTI if any positive findings on urine dip
- U&Es to identify electrolyte imbalance
- FBC and CRP to exclude infection
- Random blood glucose
- For diabetic patients, checking capillary blood glucose regularly is mandatory

On second admission:

Arrange ultrasound scan via EPAU to confirm viable intrauterine pregnancy, and exclude multiple pregnancy or trophoblastic disease.

Repeated attendances:

In addition to bloods as per first admission which should be checked on each attendance, periodically check TFTs, LFTs, blood group, magnesium, and amylase. Suggested frequency at least every second attendance, or more frequently if abnormal. TFTs may be checked less frequently such as once in first trimester and once in second trimester unless any abnormality noted.
Guidelines for the Management of Hyperemesis Gravidarum

Treatment

Inpatient management should be considered if there is at least one of the following:

a. continued nausea and vomiting and inability to keep down oral antiemetic’s
b. continued nausea and vomiting associated with ketonuria and/or weight loss (greater than 5% of body weight), despite oral antiemetic’s
c. Confirmed or suspected comorbidity (such as urinary tract infection and inability to tolerate oral antibiotics).
d. Weigh patient on admission, then twice weekly.

Intravenous (IV) infusions

- Insert non-ported cannula for IV access
- The rate of rehydration depends on the severity of NVP but usually aggressive rehydration with 1 litre of 0.9% saline with 20mmol potassium chloride (KCl) over 2 hours is often appropriate
- 0.9% saline with additional potassium chloride in each bag, guided by daily monitoring of electrolytes is the most appropriate IV hydration regimen as per RCOG guidance
- If hypokalaemic, 20-40mmol of KCl in 0.9% saline (note maximum infusion rate 10mmol/hr of KCl)
- Dextrose infusions are not appropriate unless the serum sodium levels are normal and thiamine has been administered
- Avoid glucose as it can precipitate Wernicke’s encephalopathy.

Antiemetics

- There are safety and efficacy data for first line antiemetics such as H1 receptor antagonists and they should be prescribed first when required. Although generally safe in the first trimester, they are currently not licensed for use in pregnancy in the UK.
- Combination of drugs from different classes should be used in women who do not respond to a single antiemetic
- Use all antiemetics regularly rather than PRN
- The parenteral or rectal route may be necessary and more effective than the oral regimen for women with severe or persistent NVP
# Guidelines for the Management of Hyperemesis Gravidarum

**Recommended antiemetic therapies and dosages:**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dose</th>
<th>Major side-effects</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Line</strong></td>
<td></td>
<td></td>
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<tr>
<td>Cyclizine</td>
<td>50mg PO/IM/IV TDS</td>
<td>Drowsiness, dizziness</td>
<td>H1 receptor antagonist</td>
</tr>
<tr>
<td>Prochlorperazine</td>
<td>5-10mg 6-8 hourly PO (also available as oral solution), 12.5mg 8 hourly IM, 3-6mg 12 hourly buccal</td>
<td>Hypotension, extrapyramidal symptoms (tardive dyskinesia, dystonia)</td>
<td>Antipsychotic phenothiazines</td>
</tr>
<tr>
<td>Promethazine (Phenergen)</td>
<td>12.5-25mg 4-8 hourly PO /Deep IM</td>
<td>Drowsiness, sedation</td>
<td>H1 receptor antagonist</td>
</tr>
<tr>
<td>Chlorpromazine</td>
<td>10-25mg 4-6 hourly PO/ Deep IM</td>
<td>Sedation, hypotension, extrapyramidal symptoms</td>
<td>Antipsychotic phenothiazines</td>
</tr>
<tr>
<td><strong>Second Line</strong></td>
<td></td>
<td></td>
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<tr>
<td>Metoclopramide</td>
<td>5-10mg 8 hourly PO/IV/IM (also available as oral solution)</td>
<td>Extraparamidal symptoms (torticollis, oculogyric crisis)</td>
<td>D2 receptor antagonist</td>
</tr>
<tr>
<td>Domperidone</td>
<td>10mg 8 hourly PO, 30-60mg 8 hourly PR</td>
<td>Minimal</td>
<td>D2 receptor antagonist</td>
</tr>
<tr>
<td><strong>Second line if &gt;13 weeks</strong></td>
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<tr>
<td>Ondansetron</td>
<td>4-8mg 8 hourly PO/IV</td>
<td>Headache, GI upset, Should be given &gt;13 weeks only due to fetal risk of cleft palate and renal abnormalities</td>
<td>5-HT3 receptor antagonist</td>
</tr>
<tr>
<td><strong>Third Line</strong></td>
<td></td>
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</tr>
<tr>
<td>Corticosteroids</td>
<td>Hydrocortisone 100mg BD IV, convert to prednisolone 40-50mg OD PO and taper dose to lowest level which still controls symptoms</td>
<td>Patients should be given clear advice about self-management of tapering, and a steroid alert card</td>
<td></td>
</tr>
</tbody>
</table>
When all other medical therapies have failed, enteral or parenteral treatment should be considered with a multidisciplinary approach. In refractory cases artificial nutritional support should be considered. Enteral (nasogastric or nasojejunal) or parenteral feeding can be considered. The MUST screening tool may be useful. Enteral feeding is contraindicated in women with acute vomiting due to the risk of aspiration ensure correct procedure.

Thiamine

- Should be given to all women attending with prolonged vomiting, to prevent vitamin deficiency and Wernicke’s encephalopathy.
- Thiamine 50mg oral once daily should be given to all patients treated according to the HARP for a 10 day course.

Iron

- Consider avoiding iron-containing preparations if these exacerbate symptoms

Anti-GORD measures

- Proton pump inhibitors (e.g. omeprazole) or H2 receptor antagonists may be used for women developing gastro-oesophageal reflux disease (GORD). Both are considered to be safe in pregnancy.

Venous Thromboembolism (VTE)

- Perform VTE risk assessment as per the VTE chart in the HARP integrated care pathway and treat accordingly. Appendix A

Patient education

- Reassurance
- Rest
- Dietary and lifestyle advice
- Patient information leaflet e.g.
  - [https://www.pregnancysicknesssupport.org.uk/resources/printable-leaflets/](https://www.pregnancysicknesssupport.org.uk/resources/printable-leaflets/)
- Signpost to additional support and information e.g. Pregnancy Sickness Support: [www.pregnancysicknesssupport.org.uk](http://www.pregnancysicknesssupport.org.uk)
- NHS Choices
Impression:

Based on this assessment the patient may either be suitable or not suitable but should be considered for the HARP, as per inclusion and exclusion criteria above. If the patient is suitable for HARP, follow the rest of this guideline and commence with Integrated Care Pathway (ICP). Appendix B

Patients that fulfill the HARP criteria

HARP

- Commence integrated care pathway (ICP) for HARP
- If inpatient arrange readmission for the following day and discharge with venflon in situ
- If emergency admission arrange immediate commencement of HARP and cannulate
- Follow appropriate day as per ICP

Monitoring

- Observations 4 hourly unless otherwise indicated by the NEWS score
- Input / output chart
- Weight recorded each admission

Discharge Criteria

- Patient understands and agrees to comply with discharge instructions including cannula care if relevant
- Patient has a supply of oral antiemetic’s to take home
- Satisfactory observations/ NEWS score
- Tolerating fluids and some food
- Passing adequate urine (0.5ml/kg/hr minimum)
- Make arrangements for follow up as below
- Ensure discharge criteria met for discharge home
- Ensure discharge advice given and provide open access information.
- Open access will continue until the patient reaches 22 weeks gestation at which point care must be transferred to the obstetric team
- Telephone number for Cley ward
- Give the patient the information leaflet on NVP
- Ensure that the patient has received the HARP cannula care leaflet
Consider giving a supply of urinalysis strips for home ketone testing if felt to be appropriate in individual cases

Criteria for Mandatory Doctor Review:

- Persistent ketonuria on 4th day
- Abnormal NEWS
- Failure to control symptoms
- Deranged biochemistry
- Complications/ development of new problems
- At nurse’s request for advice or review
- Where the nurse deems the patient to benefit from doctor review, the nurse will request the SHO/ Registrar/ Consultant to take over the care of the patient and document this in writing.
- After day 4 for admission or review of restarting HARP

Clinical audit standards / audit standards

To ensure that this protocol is compliant with the standards set out a random sample of 10 ICPs will be audited annually to ensure they are completed accurately. The audit results will be sent to the gynaecology matron who will review the audit standards and make recommendations for further actions

Summary of development and consultation process undertaken before registration and dissemination

During the development process the protocol had been circulated between members of the gynaecology department. This included consultants, junior doctors, senior nurses, nurse sonographers and the early pregnancy assessment unit.

References


10. The Management of Nausea and Vomiting of Pregnancy and Hyperemesis Gravidarum (Green-top Guideline No. 69) June 2016


## Appendix A

### Thromboprophylaxis risk assessment

<table>
<thead>
<tr>
<th>Lower risk (score 1 each)</th>
<th>Higher risk (score 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 3 of the following risk factors</td>
<td>Any of the following risk factors</td>
</tr>
<tr>
<td>Age &gt;35 years</td>
<td>Personal history of VTE</td>
</tr>
<tr>
<td>Varicose veins</td>
<td>Medical comorbidity e.g. inflammatory conditions, heart/lung disease, SLE, IBD, type 1 diabetes with nephropathy, nephrotic syndrome, cancer, sickle cell disease, IV drug abuse</td>
</tr>
<tr>
<td>Parity ≥3</td>
<td></td>
</tr>
<tr>
<td>BMI ≥30 (score 2 if BMI ≥40)</td>
<td></td>
</tr>
<tr>
<td>Smoker</td>
<td></td>
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<tr>
<td>Current systemic infection</td>
<td></td>
</tr>
<tr>
<td>Multiple pregnancy/assisted reproductive technique</td>
<td>Hyperemesis / ovarian hyperstimulation syndrome until recovered</td>
</tr>
<tr>
<td>Dehydration</td>
<td>Any Thrombophilia e.g. antiphospholipid syndrome, Factor V Leiden, Protein C or S deficiency, antithrombin deficiency, Prothrombin gene mutation</td>
</tr>
<tr>
<td>Immobility/journey &gt;4 hours</td>
<td>Any surgical procedure in pregnancy (except SMM or TOP)</td>
</tr>
<tr>
<td>Family history of unprovoked or oestrogen related VTE in first degree family member where thrombophilia testing not performed or results not available, if not done perform antenatal Thrombophilia screen profile bloods. (Blood profile available on WebICE)</td>
<td>Any 3 or more of the 'lower risk' factors</td>
</tr>
</tbody>
</table>

### Risk assessment results

<table>
<thead>
<tr>
<th>Low risk (TRA &lt;2)</th>
<th>Intermediate risk (TRA 2-3)</th>
<th>High risk (TRA 4+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No VTE prophylaxis required</td>
<td>Prescribes TEDS if inpatient, and LMWH for 10 days</td>
<td>Prescribe LMWH from first trimester and continue until 6 weeks postnatally</td>
</tr>
</tbody>
</table>

Completed by:
(Print name, signature, designation)

Date:
Appendix B

Integrated Care Pathway to be updated

Appendix C

Patient Information Leaflet for Hyperemesis Ambulatory Rehydration Program (HARP)

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