Milton Keynes University Hospital NHS Foundation Trust

Hyperemesis Gravidarum

Classification:	Guideline		
Authors Name:	Erum A Khan and Mary Plummer		
Authors Job Title:	Consultant Obstetrician & Gynaecologist and Matron		
Authors Division:	Women's and Children's Health		
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Guideline to be followed by (target staff):			
To be read in conjunction with the following documents: None			
Are there any eCARE implications? No			
CQC Fundamental standards: Regulation 9 – person centred care Regulation 10 – dignity and respect Regulation 11 – Need for consent Regulation 12 – Safe care and treatment Regulation 13 – Safeguarding service users from abuse and improper treatment Regulation 14 – Meeting nutritional and hydration needs Regulation 15 – Premises and equipment Regulation 17 – Good governance Regulation 19 – Fit and proper			

Disclaimer –

Since every patient's history is different, and even the most exhaustive sources of information cannot cover every possible eventuality, you should be aware that all information is provided in this document on the basis that the healthcare professionals responsible for patient care will retain full and sole responsibility for decisions relating to patient care; the document is intended to supplement, not substitute for, the expertise and judgment of physicians, pharmacists or other

healthcare professionals and should not be taken as an indication of suitability of a particular treatment for a particular individual.

The ultimate responsibility for the use of the guideline, dosage of drugs and correct following of instructions as well as the interpretation of the published material **lies solely with you** as the medical practitioner.

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Guideline Statement

To enable staff to care for women with hyperemesis gravidarum.

Executive Summary

Hyperemesis gravidarum is a common condition affecting 0.3 - 2 % of all pregnancies. It is defined as persistent vomiting in pregnancy resulting in weight loss and ketosis.

It can be associated with pre-existing diabetes mellitus, psychiatric illness, hyperthyroidism, gastrointestinal disorders, asthma, *Helicobacter pylori* infection and previous molar pregnancy. It seems to be more common in fetuses of female sex.

1.0 Roles and Responsibilities

Doctors – decision making, discussion, planning and providing antepartum care

Midwives, student midwives, nurses and MCA's – decision making, discussion, planning and providing antepartum care

2.0 Implementation and dissemination of document

This guideline will be available on the Trust intranet.

3.0 Processes and procedures

3.1 Diagnosis

Hyperemesis gravidarum (HG) is a diagnosis of exclusion. Treatment is necessary for symptomatic relief and to prevent serious complications.

The features in history that you should be aware of in a pregnant woman with vomiting:

- Previous history of nausea or vomiting in pregnancy or HG.
- Assess severity using Pregnancy-Unique Quantification of Emesis (PUQE) score: nausea, vomiting, hypersalivation, spitting, loss of weight, inability to tolerate food or fluids, effect on quality of life.
- History to exclude other causes:
  - dysuria, frequency
  - epigastric pain
  - history of *H. Pylori* infection
  - history of gastric or duodenal ulcer
  - alcohol abuse (pancreatitis)
  - right hypochondrium pain (gall stones, hepatitis).

3.1.1 Pregnancy-Unique Quantification of Emesis (PUQE) score

The PUQE score is worked out using the table below. The total score is the sum of replies to each of the three questions.

Nausea score:

- Mild nausea and vomiting during pregnancy (NVP) ≤6
- Moderate NVP = 7–12
- Severe NVP ≥13.

PUQE index

In the last 12 hours, how many hours have you felt nauseated or sick to your stomach	>6 hours (5 points)	4–6 hours (4 points)	2–3 hours (3 points)	≤1 hour (2 points)	Not at all (1 point)
In the last 12 hours, how many times have you vomited?	≥7 (5 points)	5–6 (4 points)	3–4 (3 points)	1–2 (2 points)	None (1 point)
In the last 12 hours, how many times have you had retching or dry heaving without bringing anything up	≥7 (5 points)	5–6 (4 points)	3–4 (3 points)	1–2 (2 points)	None (1 point

3.2 Complications

- Fetal growth restriction can result from protracted HG
- Occasionally, HG could result in termination of pregnancy.
- Maternal hypokalemia causes lethargy and muscle weakness.
- Hyponatremia leads to central pontine myelinolysis, thiamine deficiency leading to Wernicke's encephalopathy and/or Korsakoff psychosis.
- Intractable vomiting can cause Mallory-Weiss oesophageal tears as well as psychological morbidity.
- If total parenteral nutrition is required, it may cause infection of the central venous catheter or pneumothorax during insertion.

3.3 Outpatient management of nausea and vomiting in pregnancy (NVP) and hyperemesis gravidarum (HG) Appendix 1

- Mild NVP should be managed in the community with anti-emetics
- Ambulatory day care management should be used for suitable women when community/primary care measures have failed and the PUQE score is less than 13
- Ambulatory day care management includes:
  - Daily blood tests to monitor urea and electrolytes
  - Parenteral fluids: Plasmalyte 2 litres over 4 hours.
  - Parenteral vitamins (multi and B complex)
  - Anti-emetics

3.3.1 Admission criteria

Any woman unable to maintain adequate oral intake and has one or more of the following:

- >2+ ketones in urine
- Deranged U&E's (low Na, K, elevated urea or creatinine. Also noting any medical history of kidney disease)
- Weight loss >5%

Women who are 18 weeks pregnant or less should be seen in Early Pregnancy Assessment Unit and those who are more than 18 weeks pregnant should be reviewed in ADAU and a management plan documented.

3.4 Management on Admission

3.4.1 Examination

- Dehydration,
- Sinus tachycardia,
- Postural hypotension and ketonuria are commonly found
- Sometimes ptyalism is seen as well.

3.4.2 Observations

- Weight (and normal body weight if known)
- Lying and standing BP
- Pulse

3.4.3 Investigations

- Full blood count,
- Urea & Electrolytes
- Liver function tests, Abnormal liver function tests are common in women with hyperemesis (usually raised aminotransferases and bilirubin). These settle as symptoms resolve
- Thyroid function tests, Thyroid function tests often show biochemical hyperthyroidism. Clinical hyperthyroidism is rare, and resolution of biochemical changes occurs as symptoms settle. The value of routine assessment of thyroid function is questionable, however it may give an indication of the severity of the condition
- calcium,
- midstream specimen of urine & urine dipstick
- Ultrasound scans of the uterus.
- It is imperative that any associated atypical features like cachexia, rectal bleeding, lymphadenopathy and neural signs are thoroughly investigated
- Pelvic ultrasound (unless already performed) – hyperemesis is associated with molar and multiple pregnancy

3.5 Management

3.5.1 Intravenous Re-hydration

- Intravenous fluid and electrolyte replacement is the first line of treatment for hyperemesis gravidarum:
- Intravenous hydration: Plasmalyte 2 litres over 4 hours
- Repeat U+Es after 12–24 hours and daily to monitor sodium and potassium
- Double strength saline solution should not be used even in severe hyponatraemia – as this can precipitate central pontine myelinosis
- Dextrose containing solutions should not be used as they do not contain enough sodium and may precipitate Wernickes encephalopathy

3.5.2 Drug treatment

Antiemetics (alone or in staggered combination):

Antiemetics should be offered to patients who fail to respond to IV rehydration. If symptoms do not improve, anti-emetics should be prescribed and given regularly, rather than 'as required'. There is no reported increased teratogenic risk with standard antiemetic drugs. Possible regimes are listed below:

	Antiemetic Drug	**Dose**	**Route**	**Frequency**
First line	Cyclizine	50mg	PO, IM	8 hourly
	Prochloperazinie	10mg	PO	8 hourly
	Prochloperazine	12.5mg	IM	8 hourly
	Promethazine	25mg	PO	At bedtime
	Chlorpromazine	10-25mg	PO	8 hourly
	Chlorpromazine	25mg	Deep IM	8 hourly
	Buccal Prochloperazine is an option but please discuss with Pharmacy first regarding dose			
Second line	Metoclopromide >20yr old + >60kg	10mg	PO,IV or IM	8 hourly (Max 5 days duration)
	Domperidone >35kg	10mg	PO	8 hourly (Max 30mg/24hours)
Third line	If above drugs have been tried without success, Ondansetron 4mg po/IV 2-3 times daily may be used. Risk of oral cleft lip / palate increases from 0.1% to 0.14%			

IV Fluids	1 litre Plasmalyte (2nd bag to be guided by U&E)
Other	Thiamine – 50mg TDS PO Pabrinex – T + TT OD IV Omeprazole 20mg OD PO Folic Acid 5mg OD PO
Oculogyric crisis	Oculogyric crisis can occur with the use of phenothiazines or metoclopramide. It can be treated with: Procyclidine 5mg IM or IV. IM doses may be repeated after 20 minutes if necessary, up to a daily maximum of 20mg.

Other drugs

Ranitidine 150mg 6 hourly orally, or Omeprazole 40mg once daily orally or 20mg twice daily orally may be of benefit in women with symptoms of acid reflux.

Thiamine

All patients requiring admission should have thiamine supplementation to prevent Wernicke's encephalopathy

- 25-50mg tablets three times daily if able to tolerate tablets
- If unable to tolerate tablets use Pabrinex ampoule containing 250mg of Thiamine.

Folic acid

5mg once daily if in first trimester

3.5.3 Thromboprophylaxis

Any pregnant woman with prolonged dehydration or bed rest should receive thromboprophylaxis:

- TED stockings
- Low-molecular-weight heparin according to the weight of the patient

3.5.4 Nutrition

Women should be encouraged to eat small carbohydrate meals when symptoms are least severe. Avoid large volume drinks or meals with high fat content. Referral to dietician may be useful in selected cases.

3.5.5 Inpatient monitoring

- Weight twice weekly

- Daily urine dipstick for ketones
- Daily U&E's while on IV fluids
- Fluid input and output chart maintained

3.6 Severe hyperemesis

- Involve a multidisciplinary team.
- Consultant review prior to commencing intravenous hydrocortisone 100 mg twice daily which could be given until clinical improvement occurs - change to oral prednisolone 40–50 mg daily and the dose gradually reduced till symptomatic relief is obtained.
- If steroids do not work, then may require enteral or parenteral treatment in the form of one of the various feeding tubes, such as nasogastric, nasoduodenal or nasojujenal, or percutaneous endoscopic gastrostomy or jejunostomy.
- Total parenteral nutrition can be used where the aforementioned has failed but it has to be with close supervision by dieticians.
- Termination of pregnancy is offered as the last option when none of the other treatments have worked.

Other professionals you might need:

- Dieticians
- Pharmacists
- Endocrinologists
- Nutritionists and gastroenterologists
- Mental health team.

3.7 Psychological support

Emotional support and reassurance should be offered. Overall women can be reassured that there is no major risk to their baby. Severe hyperemesis can cause significant psychological morbidity. In extreme cases a woman may request termination of a wanted pregnancy for relief of symptoms.

3.8 On discharge

- Discharge when tolerating oral fluids and diet, or when there is one or less ketonuria.
- Simple advice should be given, encouraging small meals when symptoms are at least severe
- She should have antiemetics to take home with her and details of who to contact if symptoms recur.
- She may benefit from details of support groups (e.g. Pregnancy Sickness Support) and psychological and social support depending upon how she copes with the condition.
- A follow-up appointment for antenatal care is important in cases of severe hyperemesis.

3.9 Record keeping

Good record keeping is an integral part of obstetric and midwifery practice and is essential to the provision of safe and effective care.

You must make a clear, accurate and immediate record of all medicine administered, intentionally withheld or refused by the woman, ensuring the signature is clear and legible; it is also your responsibility to ensure that a record is made when delegating the task of administering medicine.

4.0 Statement of evidence/references

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5.0 Governance

5.1 Record of changes to document

Version number: 5	**Date:** 04/2020

Section Number	Amendment	Deletion	Addition	Reason
				To review and update
3.3	Ambulatory day care management		Treatment of ambulatory care for hyperemesis	To insert ambulatory day care management

5.2 Consultation History

Stakeholders Name/Board	Area of Expertise	Date Sent	Date Received	Comments	Endorsed Yes/No
Omar Mulki	Consultant O&G	28/03/2020	31/03/2020	Changes to criteria	Yes
Michelle Fynes	Consultant O&G	28/03/2020	31/03/2020	Agrees with changes to criteria	Yes
Vanessa Braithwaite	EPAU Sister	28/03/2020	30/03/2020	Question re IV fluids, frequency of parentral vitamins. Telephone follow up	Yes
Rachel Gutsell	Midwife	23/04/2020	27/04/2020	Fluid balance chart	Yes
Sanyal Patel	Consultant	23/04/2020	23/04/2020	Medication regime and flow chart	Yes
Julie Cooper	Head of Midwifery	23/04/2020	24/04/2020	Location of ambulatory management	Yes
Jaber Hussain	O&G Registrar	23/04/2020	23/04/2020	Fluid balance management	No – conflicts with fluid balance suggested by consultants
Guidelines meeting discussion	O&G Doctor's and Midwives	28/05/2020	28/05/2020	Remove follow up phone calls Change location of information about oculogyric crisis within the guideline	Yes

5.3 Audit and monitoring

This Guideline outlines the process for document development will be monitored on an ongoing basis. The centralisation of the process for development of documents will enable the Trust to audit more effectively. The centralisation in recording documents onto a Quality Management database will ensure the process is robust.

Audit/Monitoring Criteria	Tool	Audit Lead	Frequency of Audit	Responsible Committee/Board
• Length of stay • Number of admissions for HG in the current	Stats	Obstetrician	Annually	Maternity CIG

pregnancy				

5.4 Equality Impact Assessment

This document has been assessed using the Trust's Equality Impact Assessment Screening Tool. No detailed action plan is required. Any ad-hoc incident which highlights a potential problem will be addressed by the monitoring committee.

Equality Impact Assessment			
Division	Women's and Children's Health	Department	Maternity
Person completing the EqIA		Contact No.	
Others involved:		Date of assessment:	04/2020
Existing policy/service	Yes	New policy/service	No

Will patients, carers, the public or staff be affected by the policy/service?	Yes
If staff, how many/which groups will be affected?	All staff working in the maternity department

Protected characteristic	Any impact?	Comments
Age	NO	Positive impact as the policy aims to recognise diversity, promote inclusion and fair treatment for patients and staff
Disability	NO	
Gender reassignment	NO	
Marriage and civil partnership	NO	
Pregnancy and maternity	NO	
Race	NO	
Religion or belief	NO	
Sex	NO	
Sexual orientation	NO	

What consultation method(s) have you carried out?
Via email, discussion at guidelines meeting and CIG
How are the changes/amendments to the policies/services communicated?
Via email, discussion at guidelines meeting and CIG

What future actions need to be taken to overcome any barriers or discrimination?			
What?	Who will lead this?	Date of completion	Resources needed
Review date of EqIA			

Appendix 1: Treatment algorithm for nausea & vomiting in pregnancy and hyperemesis gravidarum

EPAU - Hyperemesis Telephone Triage

Motherisk PUQE-24 scoring system

In the last 24 hours, for how long have you felt nauseated or sick to your stomach?	Not at all (1)	1 hour or less (2)	2–3 hours (3)	4–6 hours (4)	More than 6 hours (5)
In the last 24 hours have you vomited or thrown up?	7 or more times (5)	5–6 times (4)	3–4 times (3)	1–2 times (2)	I did not throw up (1)
In the last 24 hours how many times have you had retching or dry heaves without bringing anything up?	No time (1)	1–2 times (2)	3–4 times (3)	5–6 times (4)	7 or more times (5)