UNIVERSITY HOSPITAL WISHAW
WOMEN'S SERVICES DIRECTORATE

NHS Lanarkshire

Diagnosis and Management of Nausea and Vomiting in Pregnancy and Hyperemesis Gravidarum

This document is an updated version of the previous guideline issued in 2006 under the same title, updated in 2009, and 2015.

Introduction and rationale of this guidance

Nausea and vomiting are very common presentations during pregnancy. To be diagnosed as "pregnancy related", they should be diagnosed in the first trimester of pregnancy and other causes of nausea and vomiting must be excluded.(1).
"Hyperemesis gravidarum" is defined as persistent pregnancy related nausea and vomiting associated with a triad of (2):

- *Dehydration*.
- *Weight loss*: more than 5% of pre-pregnancy weight.
- *Electrolyte imbalance*.

Aim of this guideline

This document aims at providing guidance regarding the diagnosis and management of "Hyperemesis Gravidarum "in the community and within secondary care settings within NHS Lanarkshire.

The following categories of health care professionals can use this guideline in their daily practice:

- Community midwives
- Hospital midwives
- General practitioners
- A/E medical and nursing staff.
- Obstetricians and gynaecologists.

-This guidance provides information on the assessment and management of "Hyperemesis Gravidaum" on three different escalation levels, based on the severity of the condition.

A) First line management "Community primary care setting":

- ✓ Assess the condition severity using an objective scoring system.
  - o "Pregnancy Unique Quantification of Emesis ", PUQE score is a useful validated scoring system (3).

Question	1	2	3	4	5
For how long you have felt sick or nauseated?	Not at all	<1 Hour	1-3 Hours	3-6 Hours	>6 hours
How many times per day do you vomit or throw up?	Never	1-2	3-4	5-6	>7
How many times per day do you have retching or dry heaves without bringing anything up?	Never	1-2	3-4	5-6	>7

Score : 3-6 mild , 7-12 Moderate, >/=13 Severe.

- ✓ Initial management should be provided at the community for(1,4):
  - o mild cases
  - o Moderate and severe cases till arrangements have been made for transfer for ambulatory or inpatient care.

- ✓ Community management will consist of :
  - o Dietary advice :
    - ▪ Encourage small frequent meals.
    - ▪ Encourage fluid intake.
    - ▪ Encourage Ginger intake.

  - o Ambulatory daycare management should be used for suitable patients when community/primary care measures have failed and where the PUQE score is less than 13

  - o Consider MSU

  - o Anti-emetics :
    - ▪ Antihistaminics:
      - Cyclizine
      - Promethazine
    - ▪ Dopamine antagonist:
      - Prochlorperazine
      - Metoclopramide

B) <u>Second line management (Maternity day assessment or maternity triage day management)(1,5):</u>

- ➢ Refer to maternity triage for assessment , day management or hospital admission if(6) :
  - o The above mentioned simple measures failed.
  - o Severe cases of Hyperemesis with PUQE score of > 13.

- ➢ Management in triage should include the following :
  - o History taking to exclude other causes of nausea and vomiting in pregnancy (7).
  - o Weigh the patient.
  - o Observations +MEWOS chart.
  - o Consider MSSU if not done in the community.
  - o Check FBC , U/E.
  - o Intravenous rehydration(8) :
    - ▪ If normal Potassium: 1 litre Plamalyte over 2 hours unless renal/cardiac dysfunction or PET.
    - ▪ If low Potassium : Admit for IV replacement- using prepared bags of 1 litre sodium chloride 0.9% with

20mmol potassium over 4 hours. (Available from pharmacy and on maternity wards).
- Avoid Dextrose for replacement as it can precipitate Wernick's encephalopathy.

- Parentral anti-emetics :
  - Antihistamines:
    - Cyclizine 50mg IM followed by regular oral cyclizine.
  - Dopamine antagonists:
    - Prochlorperazine 12.5mg IM followed by regular oral (5 mg TID) or buccal prochlorperazine (3-6mg BD).
    - Metoclopramide 10mg IM followed by regular oral metoclopramide for 5 days.

- If vomiting settles with rehydration and medication and urea and electrolytes are normal, allow home with regular oral antiemetics.

C) Hospitalization and inpatient management:

a. Indications(1) :
   i. Ongoing vomiting with inability to keep oral antiemetics.
   ii. Ongoing nausea and vomiting with persistent ketonuria and/or weight loss (more than 5% of prepregnancy body weight).
   iii. Suspected or confirmed co morbidity (e.g UTI or upper GIT pathology).

b. Components of inpatient management :
   i. Note new Maternity Fluid Charts taking patient's weight and fluid loss over the past 24 hours for total replacement volume
   ii. Rehydration using IV fluids :
   iii. If normal Potassium: 1 litre Plamalyte over 2 hours unless renal/cardiac dysfunction or PET.
      - 1litre of fluid should be given over 4 hours then subsequently 500ml every 4-6 hours.
      - If low Potassium : Admit for IV replacement- using prepared bags of 1 litre sodium chloride 0.9% with 20mmol potassium over 4 hours. (Available from pharmacy and on maternity wards
   iv. Thiamin (Vitamin B1) : should be offered to all admitted patients with hyperemesis(1,9,10).It can be administered as :
      - Oral : 100 mg three times daily for three days.
      - Intravenous: If oral Thiamine is not tolerated , intravenous Pabrinex (Vit B1,B2,B6,Nicotinamide,Vitamin C) should be used .

- NHSL adult refeeding guideline in documents section @ http://firstport2/staff-support/nutrition-and-dietetics/hairmyres/default.aspx has more information

v. Exclude other causes of nausea and vomiting.
vi. MEOWS chart.
vii. Thromboprophylaxis(1,11) : administer LMWH unless having active bleeding +TEDS.The standard weight based dosage used for VTE prophylaxis in pregnant patients should be used.
viii. Daily urine analysis if not eating and drinking
ix. Fluid balance chart.
x. Daily LFTs, U/E,FBC , Glucose.

D) Additional measures for hospitalized refractory cases of hyperemesis gravidarum:

- Additional medications :
  - Anti-acids(12,13) :
    - H2 receptors antagonists :Ranitidine: 150 mg, twice daily.
    - Proton pump inhibitors :
      - Lansoprazole:is the first line PPI for adults in NHS Lanarkshire.Dose:30 mg , orally, once daily.
    - Omeprazole : more safety data for usage during pregnancy is available. Compared to Lansoperazole.Dose: 20 mg , once daily.

  - Corticosteroids therapy(1,14,15):
    - Indications: when all other medical measures failed. Decision to be approved with a consultant.
    - Precautions :
      - 1% risk of cleft palate if used before 10 weeks of gestation. Patient should be counselled regarding this risk.
      - If long term steroids treatment is considered, there is a risk of neonatal adrenal suppression; patient should be counselled and neonatal alert to be reported on Badger.
    - Dosage:(See appendix-I).

E) Drugs to avoid in Hyperemesis Gravidarum:

- Dextrose :
  - Avoid usage for fluid replacement as can precipitate Wernick's encephalopathy (1).
- Pyridoxine:
  - Currently not recommended for usage in
  - hyperemesis gravidarum patients(1,16,17)
- Oral Iron therapy:

- It is advisable to avoid oral Iron treatment in refractory Hyperemesis Gravidarum patients as it can aggrevate nausea and vomiting (18).

- Multdisciplinary team management(1) :
  In refractory cases of hyperemesis , consider involving the following specialists ,depending on the clinical situation:
  - Dietician.
  - Gastroenterologist.
  - Pharmacist.
  - Psychaitrist.

- Enteral and parentral nutrition:
  - Indications and requirements:
    - Should be the last options after failure of all other medical interventions.
    - Need to be decided in multidisciplinary context.
  - Options include:
    - Enteral :
      - Naso-gastric tube.
      - Naso-dudenal , Naso-jejunal tubes
      - Gastrostomy , Jejunostomy.
    - Parentral:
      - Parentral feeding through "Peripherally Inserted Central Catheter", PICC line.

- Pregnancy termination(19.20):
  - Indications: all of the following requirements must be achieved tp consider TOP :
    - Failure of all therapeutic options.
    - Multidisciplinary decision
    - Counselling before and after TOP
    - Therapeutic failures are clearly documented.
    - Psychiatric opinion.

Discharge and follow up:

- Discharge on oral antiemetics, advise patients to continue on the oral treatment.
- Ensure the patient knows how to access further care if symptoms recur.
- Depending on severity, rehydration and repeat assessment can be arranged in the day care ambulatory unit.
- Outpatient antenatal clinic follow up for severe cases.
- If vomiting is persistent in the second and third trimester, arrange for serial growth scans.
- Provide advice and leaflets regarding patient support groups (21).

Appendix-I : **Antiemetics and their recommended dosages in hyperemesis gravidarum**

Please note the following :

1. **For patients with hyperemesis gravidarum , antiemetic medications should be prescribed as regular prescribtion , rather than " as required".**
2. **Combinations of drugs from different groups and lines can be used if deems clinically appropriate.**
3. **Different drug from the same group can be used prior to moving into the next line of drugs.The decision for escalation to be made based on clinical judgment of the case severity.**

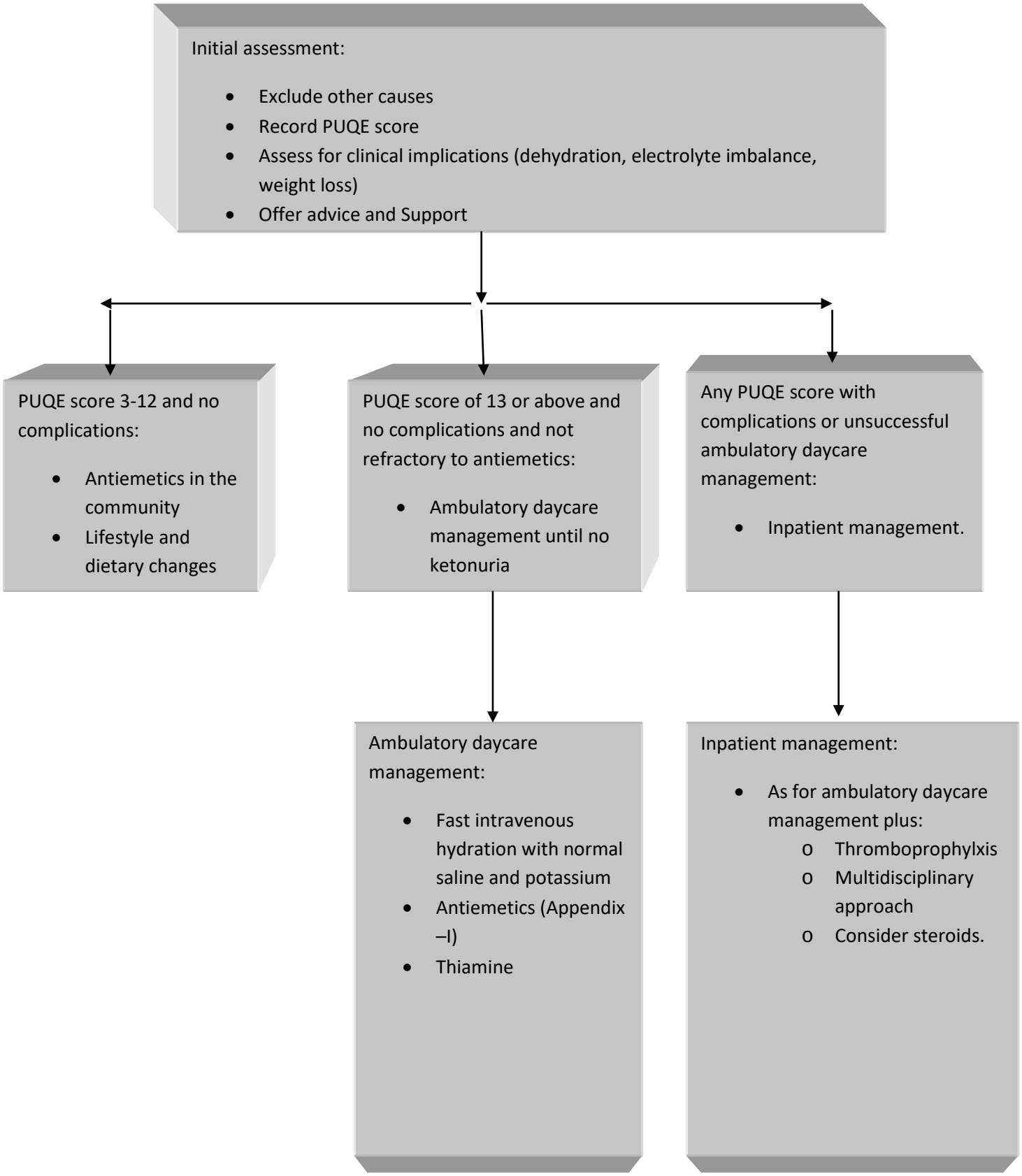
- **First line drugs :**
  - Cyclizine :
    - Group: Antihistaminic
    - 50 mg PO, IM,IV, 8 hourly
  - Prochlorperazine:
    - Group: Phenothiazine
  - 5-10 mg, 6-8 hourly PO; 12.5mg 8 hourly IM/IV; Buccal 3-6mg BD
  - Promethazine:
    - Group:Antihistaminic
    - 12.5-25 mg 4-8 hourly po,IM/IV/PR (PR Unlicensed)
  - Chlorpromazine:
    - Group:Phenothiazine.
    - 10-25 mg 4-6 hourly PO/IV/IM; 50-100 mg 6-8 hourly PR. (PR Unlicensed)
- **Second line drugs:**
  - Metoclopramide :
    - Group:Dopamine and Serotonin antagonist.
    - 5-10 mg 8 hourly PO/IV / IM, maximum duration of treatment: 5 days.
    - Side effects: Extra-pyramidal manifestations, Tardive dyskinesia on discontinuation (rare in young patients), avoid prolonged usage (22).
    - Special indications: useful in diabetic gastroparesis.
  - Domperidone:
    - Group: Dopamine antagonist.
    - 10 mg 8 hourly PO;30-60 mg 8 hourly PR. (PR Unlicensed)
    - Special indications: useful in diabetic gastroparesis(23).
    - Maximum duration of use is 1 week.
  - Ondansetron:
    - Group: Serotonin 5HT3 receptor antagonist.
    - 4-8 mg 6-8 hourly PO; 8 mg over 15 minutes 12 hourly IV.

- Constipation is a common side effect. Providing advice to the patient regarding avoiding constipation is recommended.

- Side effects and precautions: available limited data does not suggest association with major congenital malformations in pregnancy (24, 25).However, there is possible association with cleft palate and some cardiovascular malformations (e.g septal defect)(26,27) .

- **Third line drugs:**
  - Corticosteroids:
    - Dose :Hydrocortisone, 100 mg , IV , twice daily , till clinical improvements , then change to oral Prednisolone , 40-50 mg /day ,PO , taper the dose gradually until the lowest maintenance dose controlling the symptoms is reached. Seek senior advice if there is uncertainty
    - This regimen may be repeated up to three times over a six-week period.

Appendix –II: Treatment algorithm for Hyperemesis Gravidarum



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Useful websites for patient information

- www.hyperemesis.org
- www.pregnancysicknesssupport.org.uk

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Reviewed:	January 2009 Dr Evelyn Ferguson
Reviewed:	May/June 2015 Dr Clare Willocks/Dr E Ferguson/S Maharaj
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Ratified by:	Clinical Effectiveness Maternity Sub Group (October 2020)
Review date:	October 2023