Nausea and Vomiting in Pregnancy (NVP) and Hyperemesis Gravidarum (HG) Guideline

Approved by: Antenatal Forum

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Contents:

1. INTRODUCTION

NVP affects up to 80% of pregnant women and HG occurs in around 0.3-3.6%.

No definitive aetiology has been accepted for NVP/HG. The most established theory is linked to rising levels of beta human chorionic hormone (hCG), as conditions with higher hCG levels such as trophoblastic disease and multiple pregnancy have been associated with increased severity of NVP.

Definitions:

NVP is the symptom of nausea and/or vomiting during early pregnancy where there are no other causes.

HG is the severe form of NVP with defined criteria for diagnosis.

2. DIAGNOSIS

NVP should only be diagnosed when onset is in the first trimester of pregnancy and other causes of nausea and vomiting have been excluded.

HG can be diagnosed when there is protracted NVP with the triad of more than 5% pre-pregnancy weight loss, dehydration and electrolyte imbalance.

Differential diagnoses to consider, based on the history/examination/investigations:

Infection +/- sepsis:

Common sources include urinary tract infection, pneumonia, gastroenteritis, cholecystitis. While NVP and HG can have overlapping signs (e.g. low BP, raised HR), signs such as high/low temperature or high respiratory rate, as well as other symptoms in addition to the N&V (such as diarrhoea, cough, abdominal pain, dysuria/urinary frequency/haematuria, back pain, rashes) should prompt consideration of other diagnoses.

Peptic ulcer disease:

It is important to establish any previous history of PUD including previous treatment for *H.pylori.* Check whether the patient was previously taking a PPI which they may have stopped after becoming pregnant. Establish any other symptoms; heartburn, epigastric pain, acid reflux, belching.

Pancreatitis:

Again, previous episodes are important to enquire about. Establish if there are any risk factors e.g. alcohol excess or known gallstones. Pancreatitis usually causes severe abdominal pain, and there may be additional symptoms e.g. dark urine, pale stools or jaundice if the cause is gallstones.

Hepatitis:

There are multiple aetiologies of hepatitis including infective and non-infective causes. Liver disease can have a very varied presentation, but RUQ pain, jaundice and malaise are common. Key points from the history should include recent travel, any unwell close contacts and any history of intravenous drug use.

Metabolic conditions:

The symptoms of diabetic ketoacidosis can overlap with NVP/HG; establish any history of diabetes and do a BM. Thyroid disease can present with N&V; other symptoms/signs such as goitre may be present.

Other metabolic causes such hyperparathyroidism/hypercalcaemia and Addison's disease should also be considered if there are associated symptoms/signs.

Neurological conditions:

Consider if there are additional symptoms and signs e.g. headache, visual changes, limb or facial weakness, vertigo, tinnitus, hearing loss, neck stiffness. Causes include migraine, meningitis, stroke, severe hypertension, labyrinthitis, Ménière's disease.

Drug induced:

A thorough drug history including over the counter medications and recreational use is essential.

3. CLINICAL ASSESSMENT AND BASELINE INVESTIGATIONS

History:

- NVP/HG in previous pregnancies
- Symptoms in addition to nausea and vomiting; fevers, rigors, rash, abdominal or back pain, urinary symptoms, diarrhoea, vaginal discharge or bleeding, heartburn/reflux, jaundice, neurological symptoms. Please see the differential diagnosis section in section 2 for further details
- Drug history e.g. iron tablets, antibiotics, over the counter medications, recreational drugs. Any anti-emetics already tried is important
- The Pregnancy-Unique Quantification of Emesis (PUQE) index below should be used to establish the severity of NVP.

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)	**/5**
In the last 24 hours have you vomited or thrown up?	I did not throw up (1)	1-2 times (2)	3-4 times (3)	5-6 times (4)	7 or more times (5)	**/5**
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)	**/5**
Severity: Mild = ≤6; Moderate = 7-12; Severe = 13-15					**Total score:**	**/15**

Examination:

- Temperature, respiratory rate, heart rate, oxygen saturations, blood pressure
- Weight
- Fluid status – assess the mucous membranes and skin for evidence of dehydration
- Abdominal examination – significant tenderness could suggest other diagnoses

Investigations:

- Urine dipstick and MSU
- Urea and electrolytes (U&E), full blood count (FBC), blood glucose (BM)
- In treatment resistant cases or if there has been a previous admission: thyroid function tests (TFTs), liver function tests (LFTs), amylase, bone profile
- If the patient has not yet had an ultrasound scan (USS) this should be organised (to confirm viability and exclude multiple pregnancy)

4. MANAGEMENT

Management is guided by the PUQE-24 score but clinical judgement should be used in all cases.

- PUQE-24 scores of 3-12 with no complications (dehydration, electrolyte imbalance, weight loss >5%): community management is appropriate. Anti-emetics should be prescribed and the patient provided with written information (Dietary information leaflet, RCOG pregnancy sickness leaflet, Pregnancy Sickness Support Hyperemesis leaflet)
- PUQE score of ≥13 with no complications and not refractory to anti-emetics: ambulatory day assessment management until ketonuria improved (if ketonuria persists but clinical improvement, patient can return following day for further IVI if required)
- Any PUQE score with complications e.g. inability to tolerate oral anti-emetics, co-morbidity, or unsuccessful ambulatory day assessment management: in-patient management
- If not tolerating oral anti-emetics parenteral or rectal medication may be more effective.
- Electrolyte results should be used to help guide fluid management.

Referral to secondary care: primary care providers should be guided by the PUQE score criteria outlined above. Refractory symptoms despite a trial of two or more different anti-emetics, clinical concern or complications (see above) should prompt consideration of discussion with or referral to secondary care.

Prescribing:

1st Line anti-emetic	**Prochlorperazine** 5-10mg 6-8 hourly PO; 12.5mg 8 hourly IM/IV; 3-6mg buccal twice daily. **Cyclizine** 50mg PO, IM or IV 8 hourly. **Promethazine** 12.5-25mg 4-8 hourly PO, IM, or IV.
2nd Line anti-emetic	**Metoclopramide** 5-10mg 8 hourly PO, IV or IM. - Max 5 day course – risk of extrapyramidal side effects. **Ondansetron** 4-8mg 6-8 hourly PO or buccal (buccal only to be used if not tolerating PO); 8mg over 15mins 12 hourly IV. - Women must be informed of the association with slight increase in risk of cleft palate[2].
3rd Line anti-emetic	**Corticosteroids**: hydrocortisone 100mg twice daily IV. Once clinical improvement occurs convert to oral prednisolone 40-50mg daily PO, then gradually taper the dose. **Oral dosing example**: 40mg OD for one week, then reduce by 5mg each week until lowest maintenance dose that controls symptoms is reached.
Thiamine	100mg once daily PO.
Omeprazole	20mg once daily PO.

- A combination of different classes of anti-emetics should be tried in women who do not respond to a single agent.

Day Assessment Management on the Antenatal Day Assessment Unit (ADAU):

- Should include a VTE risk assessment +/- LMWH prescription
- Fast re-hydration with 1L of Hartmann's over 2 hours then 1L of NaCl 0.9% with 20mmol of KCl over 2 hours
- Prescription for thiamine and anti-emetics (considering what has been tried)
- Organisation of USS if the patient has not yet had one during this pregnancy
- If patient is clinically improved with no complications, and ketonuria improving the patient can be discharged home with anti-emetic TTO +/- PPI, plus the written information as listed for community management above

Important points to note:

- The ADAU can only admit women for the above protocol between 08:30 and 14:00. It also only has capacity to manage one patient with NVP at a time. Therefore if patients present outside these hours, on weekends or bank holidays, or there is already a patient being treated on the unit, patients should be directed to ward 1 (gynae ward) or triage/antenatal assessment unit on ward 19. Which ward patients are admitted to will depend on factors such as gestation plus the capacity of each ward on the day
- Patients requesting or awaiting a planned termination of pregnancy (TOP) can be offered management of NVP on ward 1 (gynae ward) if they would prefer this to ADAU or Ward 19

In patient management on ward 1 or 19:

- Patients should have a VTE risk assessment and be prescribed LMWH unless contraindicated
- Daily U&Es should be monitored while receiving IV fluids
- USS should be arranged if the patient has not yet had one during this pregnancy
- Consider steroids if symptoms refractory to other anti-emetics. Patients should be offered an oral glucose tolerance test at 26-28 weeks if they receive steroids
- Women with severe symptoms or symptoms extending into late second trimester or beyond should be referred to ANC for serial growth scans

Alternative therapies

Women may wish to try ginger (if mild) and/or acupuncture/acupressure. There is some evidence to support the use of acupressure and women can be reassured that neither of these are harmful in pregnancy.

5. MULTI-DISCIPLINARY TEAM APPROACH

Other healthcare professionals should be involved in the care of women with severe HVP/HG, including midwives, nurses, dieticians, pharmacists, endocrinologists, gastroenterologists, mental health professionals, as appropriate.

6. REFERENCES

1. RCOG (2016) The Management of Nausea and Vomiting of Pregnancy and Hyperemesis Gravidarum (Green-top Guideline No. 69) which can be found in full at https://www.rcog.org.uk/en/guidelines-research-services/guidelines/gtg69/

2. https://www.gov.uk/drug-safety-update/ondansetron-small-increased-risk-of-oral-clefts-following-use-in-the-first-12-weeks-of-pregnancy

7. APPENDIX 1: HYPEREMESIS PROFORMA

Assessment:

Assessment of Nausea and Vomiting in Pregnancy (NVP) and Hyperemesis Gravidarum (HG)

Patient sticker	Midwife: Doctor/grade:

Date:	**Time:**
Patient's Age:	
Parity:	
Gestation:	
EDD:	
How many days/weeks has the patient been vomiting for:	
Is the patient tolerating food Y/N:	**Is the patient tolerating fluids Y/N:**
Last weight (kg):	**Weight today (kg):**
>5% weight loss Y/N:	
Any drug allergies or previous adverse reaction to anti-emetics? Y/N: if yes please provide details:	
Is the patient currently on any anticoagulation e.g. LMWH? If yes, please record the type and dose:	

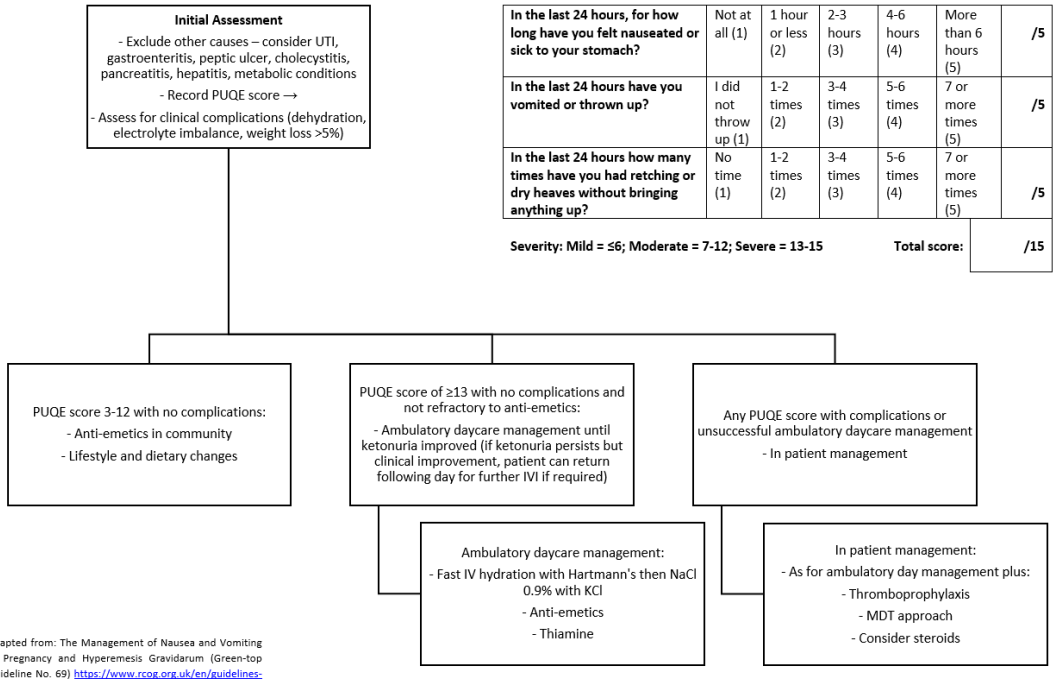
Number of previous hospital visits with HG in this pregnancy:	Out-patient: In-patient:	
Is the patient on an anti-emetic Y/N:		
If yes, which one(s)? Please tick/circle all that apply	**1st Line:** Prochloperazine Cyclizine Promethazine	**2nd line:** Metoclopramide Ondansetron
If yes, who prescribed it? Please tick/circle	GP	Hospital
History of HG in previous pregnancy Y/N (Please provide any details):		
Co-morbidities:		

Examination and Investigations:

Pulse	**BP**	**Resp Rate**	**O_2 Sats**	**Temperature**
Fluid status:	**Mucous membranes:** Please tick/circle		**Dry**	**Normal**
	Skin turgor: Please tick/circle		**Reduced**	**Normal**
Urinalysis:				**MSU sent? Y/N**
Routine bloods:	**FBC:**			
	U&E:			
Bloods to consider (if treatment resistant or previous admission)	LFT:			
	TFT:			
	Amylase:			
	Bone Profile:			
USS Y/N **If N > needs requesting**	**Y:** Tick to confirm **both** the following:		**Viable pregnancy** **Single pregnancy** ☐	

Management flowchart based on PUQE-24 score:

Flowchart to determine management



Adapted from: The Management of Nausea and Vomiting of Pregnancy and Hyperemesis Gravidarum (Green-top Guideline No. 69) https://www.rcog.org.uk/en/guidelines-research-services/guidelines/gtg69/

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Ambulatory daycare management:

Ambulatory daycare management

Patient sticker	Midwife: Doctor/grade:

Check box to indicate completed:

1) Initial steps:

☐ Complete 'Assessment of NVP & Hyperemesis Gravidarum' pro-forma

☐ Confirm patient is suitable for day unit management using 'Flowchart to determine management', if not refer patient to Ward 19 or 1

☐ If patient stays in DAU complete a **VTE risk assessment**

2) Request doctor to:

☐ Insert cannula

☐ Prescribe 1L Hartmann's over 2 hours then 1L NaCl 0.9% with 20mmol KCl over 2 hours

☐ Prescribe anti-emetics (considering what has already been tried) and thiamine

☐ Complete an USS request form if the patient has not had a scan yet

☐ Prescribe LMWH if indicated from VTE risk assessment

3) Following treatment:

☐ If patient is clinically improved with no complications, and ketonuria improving → home with anti-emetic TTO +/- PPI, plus the following written info:

☐ Dietary information leaflet given
☐ RCOG pregnancy sickness leaflet given
☐ Pregnancy Sickness Support Hyperemesis leaflet given

☐ If there are any complications or the patient remains unwell:
→ admit to Ward 1 (gynae) or 19

- If no USS in this pregnancy → **scan should be offered**
- In-patients should have a **VTE risk assessment** and all should be prescribed **LMWH** if no contraindications
- Daily U&Es should be monitored if patients are on IV fluids
- Consider steroids if symptoms refractory to other anti-emetics. **If steroids are given → offer a Glucose Tolerance Test (GTT) at 26-28 weeks**
- In women with severe symptoms or symptoms extending into late second trimester or beyond → **refer ANC to offer serial growth scans**

NB: the ADAU can only treat one patient with NVP at a time and only between 08:30-14:00. Patients referred outside these hours, on weekends/bank holidays, or when a patient is already being treated on the unit, should also go to ward 1 or 19

Prescribing: Use a combination of different classes of anti-emetics in women who do not respond to a single agent.

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Maternity Services

Checklist for Clinical Guidelines being Submitted for Approval

Title of Guideline:	Nausea and Vomiting in Pregnancy (NVP) and Hyperemesis Gravidarum (HG) Guideline
Name(s) of Author:	J Burridge and F Hodge
Chair of Group or Committee approving submission:	Antenatal Forum
Brief outline giving reasons for document being submitted for ratification	
Details of persons included in consultation process:	
Name of Pharmacist (mandatory if drugs involved):	
Issue / Version No:	
Please list any policies/guidelines this document will supercede:	
Date approved by Group:	September 2020
Next Review / Guideline Expiry:	September 2023
Please indicate key words you wish to be linked to document	Hyperemesis gravidarum, vomiting in pregnancy, pregnancy sickness
File Name: Used to locate where file is stores on hard drive	