Management of Nausea and Vomiting in Pregnancy and Hyperemesis Gravidarum

This guideline is to support the management of people experiencing nausea and vomiting of pregnancy (NVP) and hyperemesis gravidarum (HG) in General Practice and specialist care settings in Sussex. It is based on The Royal College of Obstetricians and Gynaecologists guidance, The Management of Nausea and Vomiting of Pregnancy and Hyperemesis Gravidarum, where additional information can be found if required.

1. INTRODUCTION

This guideline is based on The Royal College of Obstetricians and Gynaecologists (RCOG) guidance, The Management of Nausea and Vomiting of Pregnancy and Hyperemesis Gravidarum, where additional information can be found if necessary.

Nausea and vomiting of pregnancy (NVP) is defined as nausea and/or vomiting during pregnancy, when onset is prior to 16 weeks gestation and there are no other causes. NVP affects up to 90% of people during pregnancy and is one of the most common reasons for a hospital admission during pregnancy.

NVP is often referred to as morning sickness, which is inaccurate given symptoms do not only occur in the morning. It also trivialises the condition and should therefore be avoided.

Most pregnant people experiencing NVP can be successfully managed in General Practice. It is common for people with NVP to present to their GP because symptoms often occur prior to their pregnancy being booked by a midwife.

In many cases, people would have tried non-medical options to manage symptoms of NVP prior to presenting to a healthcare setting, therefore they may be experiencing severe symptoms at the point of first being seen by a GP.

Hyperemesis Gravidarum (HG) is a severe form of NVP, which affects up to 3.6% of pregnant people, significantly interfering with quality of life and the ability to eat and drink normally. HG can often be managed by GPs, but in some cases referral for specialist support, e.g., to Secondary Care or via the Maternal Medicine Centre, is necessary. The PUQE score [Appendix 2.] is used to differentiate NVP from HG.

NVP and HG are associated with serious health consequences for both mother and baby, especially if the mother is unable to take regular medication for a chronic health condition as a result. Prompt effective management of NVP and HG improves quality of life and pregnancy outcomes.

2. MEDICATION TO MANAGE SYMPTOMS OF NVP AND HG

- All the antiemetic medications included in this guideline can be taken in all trimesters of pregnancy. Information regarding risk of medication use in pregnancy can be found in section 5.
- When managing pregnant people who experienced NVP or HG in a previous pregnancy, offer the medication that previously optimally managed their symptoms.
- When someone who is pregnant for the first time presents with NVP or HG, start treatment with either pyridoxine hydrochloride/doxylamine succinate (Xonvea), which is licensed for use in pregnancy, or cyclizine.
- Many people respond to pyridoxine hydrochloride/doxylamine succinate (Xonvea) when cyclizine has been ineffective.
- Combinations of antiemetics should be used in pregnant people who do not respond to a single agent, with some people requiring more than two medications to effectively manage their symptoms.
- Encourage use of antenatal vitamins at night to reduce possible influence on symptoms.
- Consider offering thiamine 100mg three times a day to patients with ≥13 PUQE score.

Pregnancy-Unique Quantification of Emesis (PUQE): a validated scoring system that may be used to assess the severity of symptoms of nausea and vomiting in pregnancy.

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)	>6 hours (5)
In the last 24 hours have you vomited?				
Did not throw up (1)	1-2 times (2)	3–4 times (3)	5-6 times (4)	7 or more times (5)
In the last 24 hours how many times have you had retching or dry heaves without bringing anything up?				
No times (1)	1–2 times (2)	3–4 times (3)	5–6 times (4)	7 or more times (5)
Total score indicating severity of symptoms is the sum of replies to each of the three questions: mild <= 6; moderate 7–12; severe 13–15. A score of 13 or greater has been used as a criterion for admission to hospital in women with severe nausea and vomiting of pregnancy.				
General practitioners see Appendix 1 and 2 **Secondary care practitioners see Appendix 3, 4, and 5**				

Advice available at all stages from the Sussex maternal medicine hub
uhsussex.smmchelpline@nhs.net

STEP ONE

Doxylamine + pyridoxine (Xonvea)

(only licensed product for use in pregnancy).

AND / OR

Cyclizine

STEP TWO

Combine regular use of a 1st line antiemetic with regular use of a 2nd line antiemetic (ondansetron / metoclopramide / domperidone). Utilise synergistic effects of medications with different mechanisms of action

STEP THREE

Add an antiemetic with a different mechanism of action to regular use of 1st and 2nd line antiemetics AND refer to gynaecology /obstetrics (see section 7)

Admit to an ambulatory day unit for hydration and medication optimisation including administration of IV antiemetic medications. See section 4 for inpatient management.

Antiemetic*	Class	Preference	Tab.	Liq.	Oral Starting Dosing	Inj.	Other
Doxylamine + pyridoxine (Xonvea)	Antihistamine	1st line	X		TWO tablets to be taken at bed-time. Increase to additional ONE tablet in the morning and ONE tablet at lunch time if required.	X	
Cyclizine	Antihistamine		X	X	50 mg up to 3 times a day.	X	
Prochlorpera-zine	Phenothiazine	Other 1st line options	X		5 – 10 mg 2–3 times a day.	X	Buc-cal
Promethazine	Phenothiazine		X		12.5 - 25 mg three to four times a day	X	
Ondansetron*	Serotonin antagonist	2nd or 3rd line options	X	X	4mg three times a day or 8mg twice a day	X	Oro-disp.
Metoclopramide	Dopamine antagonist		X	X	10 mg three times a day		
Domperidone	Dopamine antagonist		X	X	10 mg three times a day		

Ondansetron: Prescribe laxatives if constipation develops, if constipated at presentation consider a different 2nd line antiemetic. See section 5 for visualisation of cleft lip/palate incidence. Higher doses are possible discuss with uhsussex.smmchelpline@nhs.net

Dopamine antagonist and serotonin antagonists: Dosing duration limits are noted in product literature, but risks of longer-term prescribing need to be balanced against of unmanaged NVP or HG. RCOG states metoclopramide can be prescribed for more than five days during pregnancy when it alleviates symptoms. Patients must be counselled to stop medication immediately if they experience dystonic reactions.

See section 5 for Medication risk in pregnancy. Consult product literature for dosing and additional information to support safe prescribing

3. PRACTICE POINTS FOR GENERAL PRACTITIONERS

See Appendix 1 and Appendix 2

It is unusual for NVP or HG to start after 16 weeks of pregnancy, therefore alternative causes of symptoms should be considered, e.g. UTI, cholecystitis, infective gastroenteritis.

Assessment and monitoring

- Use the PUQE score to assess NVP or HG severity [Appendix 3]. Ketonuria is not an indicator of dehydration and should not be used to assess the severity of NVP or HG.
- Assess and regularly (e.g., weekly) monitor renal function, weight, and hydration. It is likely that vitamin deficiencies will occur if food intake is severely limited for a protracted period; assess FBC, iron, B12, and folate.
- Risk assess in line with national guidance for venous thromboembolism (VTE), given dehydration increases VTE risk, and initiate prophylactic low molecular weight heparin (LMWH) if necessary (ambulatory care centre may need to be contacted; see section 7).
  - RCOG: Reducing the Risk of Thrombosis and Embolism during Pregnancy and the Puerperium.
- Undertake an assessment of mental health, given the negative effects of nausea and vomiting on wellbeing and the experience of pregnancy is often underestimated. Some people with poorly controlled NVP or HG become so depressed, with psychosis experienced in extreme cases, that a termination of pregnancy is sought to escape their overwhelming symptoms.
  - Specialist perinatal mental health services information
  - 24/7 mental health crisis line information
  - NICE guidance: Antenatal and postnatal mental health checklist
- Regularly follow-up to reassess symptoms and modify treatment if necessary. Consider admission for rehydration if symptoms worsen or not improve with oral antiemetics / red flags are present; contact on-call obstetrics and gynaecology team (see section 7).

Counselling

- Validate the person's experience of symptoms and do not minimise or undermine the perceived severity (Appendix 2).
- Do not falsely reassure someone with moderate to severe NVP or HG that their symptoms will dissipate by the second trimester of pregnancy; a significant number of people experience symptoms throughout the pregnancy.
- Advise that they may benefit from rest and time off work. Consider writing a sick note.
- Provide the RCOG pregnancy sickness patient information leaflet.
- Share details of Pregnancy Sickness Support, an organisation providing support to people experiencing NVP and HG that accepts self-referrals.

Prescribing

- Do not depend solely on non-drug management.
- The risk of inadequate nutrition and inability to take regular medications outweigh the small risks presented by antiemetic medications, all of which are considered safe in pregnancy.
- People taking critical medications, e.g., antiepileptics, biologic agents, and immunosuppressants, should be referred to the maternal medicine hub for advice / review and/or site maternal medicine clinics at the point of presentation, given the impact of missing medications can be life threatening.
- People with severe symptoms will require prescribing of multiple antiemetics concurrently.
- Optimise management of associated gastro-oesophageal reflux disease, oesophagitis, or gastritis symptoms.
- Consider avoiding medications that may contribute to NVP or HG symptoms, e.g., iron-containing preparations, utilising clinical judgement.
- Refer for ambulatory care (See section 7) in the instance of clinical dehydration, as IV fluids IV thiamine and IV antiemetics should be administered.
- Pregnant people who are taking three antiemetic medications or have persistent or recurrent symptoms despite adequate ambulatory day care treatment should be cared for as inpatients because of associated complications such as electrolyte imbalance, nutritional deficiencies, and VTE (see section 7).
- It may be possible to stop antiemetic medication at around 12–16 weeks of pregnancy, when symptoms have usually improved. However, some people continue to experience NVP or HG beyond this gestation.
- Gradually tapering the combination of antiemetics, or dose if only one agent is being used, may reduce the risk of symptoms recurring.
- NVP or HG are likely to recur in subsequent pregnancies; pre-emptive use of medication before vomiting starts can reduce the severity of disease in this instance.
- A non-medical prescriber, e.g., potentially a practice pharmacist or nurse, who are competent in the management of NVP and HG can follow people up.

4. PRACTICE POINTS FOR SECONDARY CARE (INPATIENT MANAGEMENT)

- Review risks and consider prescribing LMWH as per local guideline.
- **Refer to the flowchart for an overview of inpatient management.**
    - Appendix 3. Summary for ambulatory care
    - Appendix 4. Summary for emergency department staff
    - Appendix 5. Summary for inpatient care
- Refer to section 2 for antiemetic medication guidance, and section 5 for information regarding risk of medication in pregnancy.

- Levels of ketones should not be used to inform clinical decision making about treatments or hydration status.
- Dextrose-containing solutions can precipitate Wernicke's encephalopathy in thiamine-deficient states; hence they should be avoided. High doses of thiamine should be given to prevent Wernicke's encephalopathy, e.g. thiamine 250mg IV once daily for 3 days or Pabrinex given in line with local guidance. Dextrose containing fluids are appropriate for nausea and vomiting in the third trimester to prevent and treat starvation ketosis.
- Ensure suitable parental potassium supplementation occurs [see Appendix 6].
- Refer to dieticians for input in severe cases or in the context of significant weight loss (5% of pre-pregnancy body weight). The nutrition team maybe required for advice regarding the need for nasogastric or nasojejunal administration of feeds / parental nutrition in extreme cases of HG. Please discuss plan with input from maternal medicine team.
- Corticosteroids should be reserved for cases where standard therapies have failed; when initiated they should be prescribed in addition to previously started effective antiemetics**.** Decision to be made by senior obstetrician or maternal medicine team.
    - Consider hydrocortisone 100 mg twice daily IV, converted to prednisolone 40–50 mg orally daily once clinical improvement occurs, with the dose gradually tapered by 5-10 mg per week until the lowest maintenance dose that controls the symptoms is reached.
    - Pregnant person taking corticosteroids should have their blood pressure regularly monitored and be screened for gestational diabetes mellitus with glucose tolerance test (refer to NICE guidance: Diabetes in pregnancy).
    - If no improvement occurs with corticosteroids within one week of commencing treatment then discuss with maternal medicine team.
- Discharge should only occur once
    - appropriate antiemetic therapy has been tolerated,
    - adequate oral nutrition and hydration has been tolerated,
    - management of concurrent conditions is complete.
- At the time of discharge, it is essential that advice is given to continue with antiemetics where appropriate and that how to access further care if described.
- People with severe NVP or HG who have continued symptoms into the late second or third trimester should be offered serial scans to monitor fetal growth.
- Practitioners should carry out a full assessment of both physical and mental health status during the pregnancy and refer for psychological support if necessary.
- Information about support groups should be provided to anyone admitted with NVP or HG.
- People with previous HG should be advised that there is a risk of recurrence in future pregnancies. Early use of lifestyle/dietary modifications and antiemetics that were useful in the index pregnancy is advisable to reduce the risk of NVP and HG in any other pregnancies.

5. MEDICATION RISK IN PREGNANCY

Refer to the UK Teratology Information Service, for evidence-based safety information about medication, vaccine, chemical and radiological exposures in pregnancy.

It is important to complete an individual risk assessment for pregnant people you are considering prescribing for, and to apply the principles of prescribing during pregnancy when considering available information and making treatment decisions. Check to see if a risk assessment has already been completed.

When balancing risks, note that untreated or inadequately treated severe or chronic nausea and vomiting can have adverse effects on the mother and baby.

Ondansetron

Despite concerns about orofacial clefting with ondansetron use in the first trimester, there is evidence that ondansetron use is linked to only a very small increase in absolute risk (Figure 1. and Figure 2.).

The use of ondansetron should not be discouraged if first line antiemetics are ineffective, and the pregnant person can be reassured (potentially utilising the visual risk summary) that the increased risk of orofacial clefting associated with ondansetron use is very small. This very small increase in risk of orofacial clefting should be balanced against the risks of poorly managed NVP or HG.

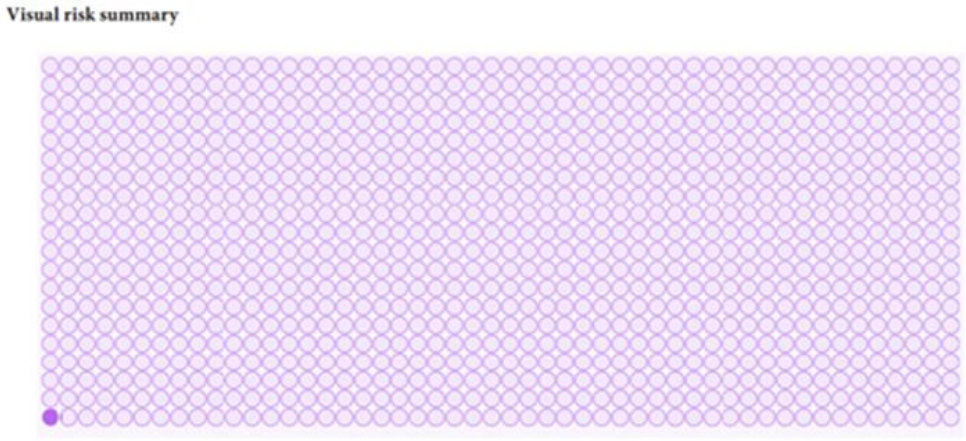


Figure 1. Rate of orofacial clefts in non-exposed pregnancies- 11 per 10,000

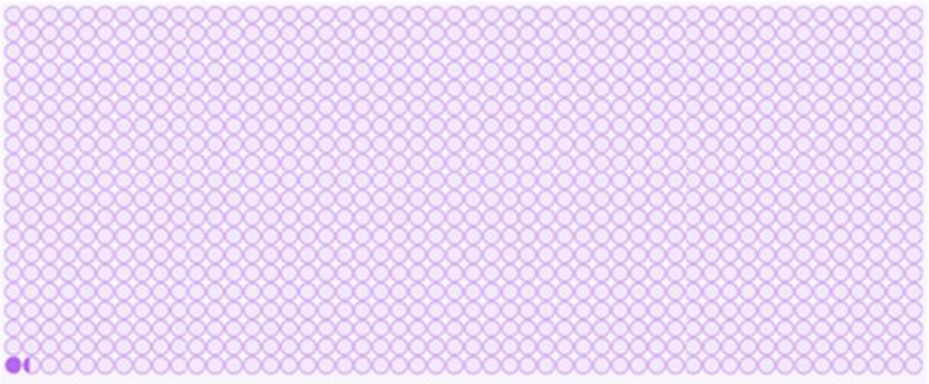


Figure 2. Rate of orofacial clefts in ondansetron-exposed pregnancies- 14 per 10,000

6. CONSIDERATION OF TERMINATION OF PREGNANCY

All treatment options, including antiemetics, corticosteroids, enteral tube and parenteral feeding, and correction of electrolyte or metabolic disturbances should be considered before deciding that the only option is termination of pregnancy.

A decision to terminate a pregnancy needs to be multidisciplinary. Psychiatric opinion should be sought if there are concerns regarding mental health. In the instance NVP or HG treatment failure is the reason for termination of pregnancy, this should be clearly documented.

Any pregnant person consideration termination of pregnancy because of NVP or HG should be offered counselling before and after a decision of pregnancy termination is made.

7. HOW TO REFER FOR SPECIALIST SUPPORT / AMBULATORY CARE

Princess Royal Hospital	uhsussex.sussexmmc@nhs.net / on call gynaecology registrar via switchboard 01444 441881
Royal Sussex County Hospital	uhsussex.sussexmmc@nhs.net / on call gynaecology registrar via switchboard 01273 696955
Conquest Hospital & Eastbourne DGH	esht.maternal-medicine@nhs.net 0300 131 4480 (early pregnancy)
St Richards Hospital, Chichester	uhsussex.srhmaternalmedicine@nhs.net on call gynaecology registrar via switchboard 01243 788122
Worthing Hospital	uhsussex.wor-mmc@nhs.net / on call gynaecology registrar via switchboard 01903 205111
Maternal Medicine Hub helpline (Sussex-wide support): uhsussex.smmchelpline@nhs.net	

8. USEFUL RESOURCES AND SIGNPOSTING INFORMATION

- The Management of Nausea and Vomiting of Pregnancy and Hyperemesis Gravidarum
- RCOG pregnancy sickness patient information leaflet
- Pregnancy Sickness Support, an organisation providing support to people experiencing NVP and HG that accepts self-referrals.
- Pregnancy Sickness Support information about treatments for NVP and HG
- UK Teratology Information Service, for evidence-based safety information about medication, vaccine, chemical and radiological exposures in pregnancy.
- Specialist Pharmacy Service: Nausea and Vomiting: treatment during pregnancy
- Specialist Pharmacy Service: Assessing risk and informing the risk versus benefit decision for medicines in pregnancy
- HER Foundation - hyperemesis awareness, support, and research

APPENDIX 1. SUMMARY FOR GENERAL PRACTITIONERS

[The Management of Nausea and Vomiting of Pregnancy and Hyperemesis Gravidarum]

Note PUQE score available in APPENDIX 2.

Vai. Summary for General Practitioners

Royal College of Obstetricians & Gynaecologists

GPCPC

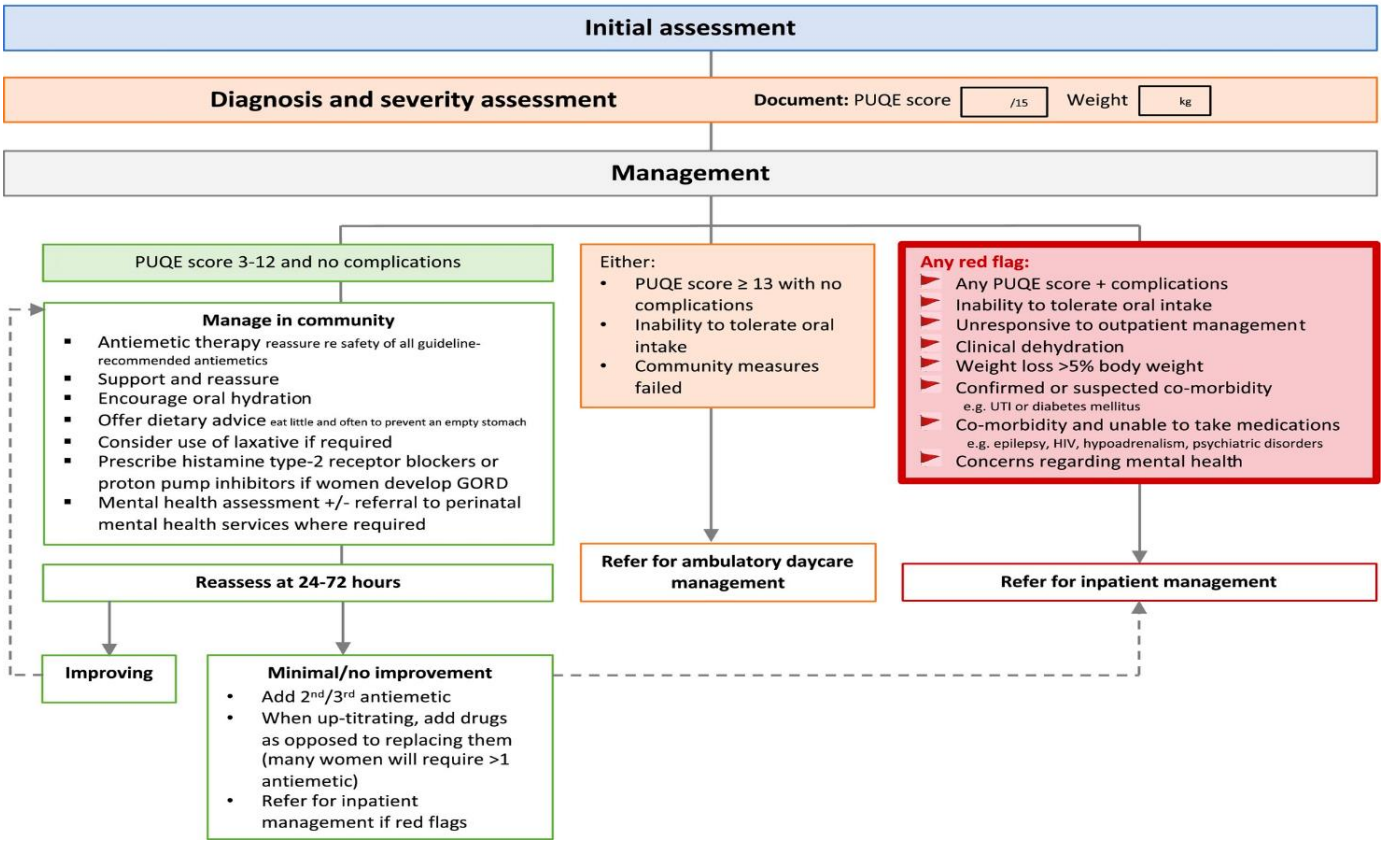
Why is the active management of nausea and vomiting of pregnancy (NVP)/ hyperemesis gravidarum (HG) important?

- NVP/ HG is associated with serious health consequences for both mother and baby
- Patients with NVP/HG often present to primary care as onset of symptoms occur prior to their pregnancy being booked by a midwife
- Patients are likely to have tried non-pharmacological options prior to presenting thus they may have severe disease at first presentation to primary care

Practice points for general practitioners:

- Validate patients' symptoms
- There are safety and efficacy data for first line antiemetic therapy including anti (H1) histamines, phenothiazines and doxylamine/pyridoxine and they should be prescribed when required for the management of NVP/HG
- In patients with severe disease multiple antiemetics prescribed together will be required
- Ketonuria is not an indicator of dehydration and should not be used to assess severity of NVP/HG
- Guidance for referral to secondary care is included in the algorithm below
- NVP/HG is likely to recur in subsequent pregnancies and pre-emptive use of medication can reduce severity of disease future pregnancies
- An assessment of mental as well as physical is important

Recommended simplified management algorithm for management of NVP/HG in primary care (for detailed algorithm see appendix Vaii):



APPENDIX 2. SUMMARY FOR MANAGEMENT IN GENERAL PRACTICE

Vaii. Management of Nausea and Vomiting of Pregnancy (NVP)/ Hyperemesis Gravidarum (HG) in General Practice

Initial assessment

History:
- Previous history of NVP/HG ☐
- Ptyalism (hypersalivation) ☐
- Weight loss ☐
- Poor oral intake ☐
- Effect on quality of life ☐
- Effect on mental health/mood ☐

Consider other causes in those with:
- Abdominal pain ☐
- Urinary symptoms ☐
- Infective symptoms ☐
- Possible drug cause ☐
- Chronic H. pylori infection ☐

Examination:

Observations:
- Temperature ☐
- Heart rate ☐
- Blood pressure ☐
- Respiratory rate ☐

Physical examination:
- Signs of dehydration ☐
- Signs of malnutrition ☐
- Abdominal examination ☐
- Neurological signs ☐
  Prescence of confusion, nystagmus or ataxia should raise suspicion of Wernicke's encephalopathy

Royal College of Obstetricians & Gynaecologists

GPCPC

Investigations:
- Urine dipstick +/- MSU ☐
  nitrites may indicate urinary tract infection
  NB. Ketones are not a marker of dehydration
- Urea and electrolytes ☐
  to assess for hypo/hyperkalaemia, hyponatraemia, kidney injury
- Full blood count ☐
  infection, raised Hb or Hct may indicate dehydration
- Blood glucose ☐
  to assess for diabetes

Diagnosis and severity assessment

Document: PUQE score /15 Weight kg

Diagnosis:

NVP:
- onset of nausea and/or vomiting in early pregnancy with no other cause is identified ☐

HG:
- Nausea and vomiting (one of which is severe) ☐
- Onset <16 weeks' gestation ☐
- Inability to eat and drink normally ☐
- symptoms limit daily activity ☐

PUQE-24 scoring system:

In the last 24 hours:

How long have you felt nauseated or sick to your stomach for?	Not at all [1]	≤1h r[2]	2-3hrs [3]	4-6hrs [4]	>6hrs [5]
How many times have you vomited?	0x [1]	1-2x [2]	3-4x [3]	5-6x [4]	≥7x [5]
How many times have you had retching or dry heaves?	0x [1]	1-2x [2]	3-4x [3]	5-6x [4]	≥7x [5]

Management

PUQE score 3-12 and no complications

Manage in community
- Antiemetic therapy *reassure re safety of all guideline- recommended antiemetics*
- Support and reassure
- Encourage oral hydration
- Offer dietary advice *eat little and often to prevent an empty stomach*
- Mental health assessment +/- referral to perinatal mental health services where required

Reassess at 24-72 hours

Improving

Minimal/no improvement : Add 2nd/3rd antiemetic; Refer for inpatient management if red flags

Either:
- PUQE score ≥ 13 with no complications
- Inability to tolerate oral intake
- Community measures failed

Refer for ambulatory daycare management

Any red flag:
- Any PUQE score + complications
- Inability to tolerate oral intake
- Unresponsive to outpatient management
- Clinical dehydration
- Weight loss >5% body weight
- Confirmed or suspected co-morbidity
  e.g. UTI or diabetes mellitus
- Co-morbidity and unable to take medications
  e.g. epilepsy, diabetes mellitus, HIV, hypoadrenalism and psychiatric disorders
- Concerns regarding mental health

Refer for inpatient management

Antiemetic therapy

1st line Doxylamine and pyridoxine 20/20mg PO at night, increase to additional 10/10mg in morning and 10/10mg at lunchtime if required.
Cyclizine 50 mg PO, IM or IV 8 hourly
Prochlorperazine 5–10 mg 6–8 hourly PO (or 3 mg buccal) ; 12.5 mg 8 hourly IM/IV;

Promethazine 12.5–25 mg 4–8 hourly PO, IM or IV
Chlorpromazine 10–25 mg 4–6 hourly PO, IM or IV

2nd line Metoclopramide 5–10 mg 8 hourly PO, IV/IM/SC
Domperidone 10 mg 8 hourly PO; 30 mg 12 hourly PR
Ondansetron 4 mg 8 hourly or 8mg 12 hourly PO; 8 mg over 15 mins 12 hourly IV;

Women taking ondansetron may require laxatives if constipation develops

3rd line Prednisolone 40–50 mg daily PO, with the dose gradually tapered until lowest maintenance dose that controls the symptoms is reached

Corticosteroids should be reserved for cases where standard therapies have failed; when initiated they should be prescribed in addition to previously started antiemetics. Women taking them should have their BP monitored and a screen for DM

Other considerations

Up titration of antiemetics:
- Initially select a 1st line antiemetic
- Use combinations of drugs in women who do not respond to a single antiemetic
- When up titrating add drugs as opposed to replacing them *Different classes of drugs may have synergistic effects and some women will require a combination of 3+ antiemetics to control symptoms*

For all patients consider:
- Histamine type-2 receptor blockers or proton pump inhibitors if women develop GORD
  Both safe in pregnancy
- Thiamine supplementation in those with severely reduced dietary intake
- Laxatives if required for constipation
- VTE risk assessment *(see RCOG risk assessment tool)*

Post-partum care, planning for future pregnancy and signposting

- Patients with severe HG are risk of PTSD *if required they should be referred to appropriate services*
- In future pregnancy early use of lifestyle modifications should be used
- Pre-emptive use of doxylamine and pyridoxine can be used to reduce severity of disease in subsequent pregnancy *20/20mg PO at night to be started on confirmation of positive pregnancy test and up titrated when required*

- Pregnancy Sickness Support
- HER Foundation
- UK Teratology Information Service
- Best use of medicine pregnancy

uktis

bumps

APPENDIX 3. SUMMARY FOR AMBULATORY CARE

See antiemetic therapy table for information in APPENDIX 1.

Vb. Management of Nausea and Vomiting of Pregnancy (NVP)/ Hyperemesis Gravidarum (HG) in the ambulatory care

Initial assessment

Confirm diagnosis:

NVP:
- onset of nausea and/or vomiting in early pregnancy with no other cause is identified ☐

HG:
- Nausea and vomiting (one of which is severe) ☐
- Onset <16 weeks' gestation ☐
- Inability to eat and drink normally ☐
- symptoms limit daily activity ☐

Consider other causes in those with:
- Abdominal pain ☐
- Urinary symptoms ☐
- Infective symptoms ☐
- Possible drug cause ☐
- Chronic H. pylori infection ☐

Examination:

Observations:
- Temperature ☐
- Heart rate ☐
- Blood pressure ☐
- Respiratory rate ☐

Physical examination:
- Signs of dehydration ☐
- Signs of malnutrition ☐
- Abdominal examination ☐
- Neurological signs ☐
  Prescence of confusion, nystagmus or ataxia should raise suspicion of Wernicke's encephalopathy

Royal College of Obstetricians & Gynaecologists

The Association of Early Pregnancy Units

Investigations:
- Urine dipstick +/- MSU ☐
  nitrites may indicate urinary tract infection
  NB. Ketones are not a marker of dehydration
- Urea and electrolytes ☐
  to assess for hypo/hyperkalaemia, hyponatraemia, kidney injury
- Full blood count ☐
  infection, raised Hb or Hct may indicate dehydration
- Blood glucose *to assess for diabetes* ☐
- Amylase *to assess for pancreatitis* ☐
- VBG *in severe cases to exclude metabolic disturbance* ☐

Assess mental health status: ☐ **if concerns refer to mental health services**

Severity assessment using PUQE-24 scoring system and management **Document:** PUQE score ☐ /15

In the last 24 hours:

How long have you felt nauseated or sick to your stomach for?	Not at all [1]	≤1hr[2]	2-3hrs [3]	4-6hrs [4]	>6hrs [5]
How many times have you vomited?	0x [1]	1-2x [2]	3-4x [3]	5-6x [4]	≥7x [5]
How many times have you had retching or dry heaves?	0x [1]	1-2x [2]	3-4x [3]	5-6x [4]	≥7x [5]

Management

Both:
- PUQE score 3-12 and
- No red flags

Discharge to community
- Up titrate antiemetic therapy and reassure regarding safety ☐
- Encourage oral hydration ☐
- Offer dietary advice eat little and often to prevent an empty stomach ☐
- Referral to perinatal mental health services where required ☐

Either:
- PUQE score ≥ 13 with no complications
- Inability to tolerate oral intake
- Community measures failed

Send to ambulatory unit if available or treat in emergency department
- Insert venflon and send relevant blood tests ☐
- Prescribe antiemetics IM or IV ☐
- Prescribe IV fluids: ☐
  - 0.9% saline +20mmol Kcl over 1-2 hours
- Thiamine supplementation either: ☐
  - Thiamine 100mg TDS PO
  - Pabrinex® I+II (vial of each) IV ⊗

Reassess

Any red flags:
- Any PUQE score + complications
- Inability to tolerate oral intake
- Unresponsive to outpatient management
- Clinical dehydration
- Weight loss >5% body weight
- Confirmed or suspected co-morbidity e.g. UTI or diabetes mellitus
- Co-morbidity and unable to take medications e.g. epilepsy, HIV, hypoadrenalism or psychiatric disorders

Refer for inpatient management

Pregnancy Sickness Support

HER Foundation

UK Teratology Information Service

Best use of medicine pregnancy

For all patients consider:
- Histamine type-2 receptor blockers or proton pump inhibitors if women develop GORD ☐
- Thiamine supplementation in those with severely reduced dietary intake ☐
- Laxatives if required for constipation ☐
- VTE risk assessment (see RCOG risk assessment tool) ☐

⊗ Trust maybe using IV thiamine see local policy

APPENDIX 4. SUMMARY FOR EMERGENCY DEPARTMENT STAFF

Vc. Management of Nausea and Vomiting of Pregnancy (NVP)/ Hyperemesis Gravidarum (HG) in the Emergency Department

Initial assessment

Confirm diagnosis:

NVP:
- Onset of nausea and/or vomiting in early pregnancy with no other cause is identified ☐

HG:
- Nausea and vomiting (one of which is severe) ☐
- Onset <16 weeks' gestation ☐
- Inability to eat and drink normally ☐
- symptoms limit daily activity ☐

Consider other causes in those with:
- Abdominal pain ☐
- Urinary symptoms ☐
- Infective symptoms ☐
- Possible drug cause ☐
- Chronic H. pylori infection ☐

Examination:

Observations:
- Temperature ☐
- Heart rate ☐
- Blood pressure ☐
- Respiratory rate ☐

Physical examination:
- Signs of dehydration ☐
- Signs of malnutrition ☐
- Abdominal examination ☐
- Neurological signs ☐
  Prescence of confusion, nystagmus or ataxia should raise suspicion of Wernicke's encephalopathy

Royal College of Obstetricians & Gynaecologists — Royal College of Emergency Medicine

Investigations:
- Urine dipstick +/- MSU ☐
  nitrites may indicate urinary tract infection
  NB. Ketones are not a marker of dehydration ☐
- Urea and electrolytes ☐
  to assess for hypo/hyperkalaemia, hyponatraemia, kidney injury
- Full blood count ☐
  infection, raised Hb or Hct may indicate dehydration ☐
- Blood glucose *to assess for diabetes* ☐
- Amylase *to assess for pancreatitis* ☐
- VBG *in severe cases to exclude metabolic disturbance*

Assess mental health status: ☐ **if concerns refer to mental health services**

Severity assessment using PUQE-24 scoring system and management

Document: PUQE score ☐ /15

In the last 24 hours:

How long have you felt nauseated or sick to your stomach for?	Not at all [1]	≤1hr[2]	2-3hrs [3]	4-6hrs [4]	>6hrs [5]
How many times have you vomited?	0x [1]	1-2x [2]	3-4x [3]	5-6x [4]	≥7x [5]
How many times have you had retching or dry heaves?	0x [1]	1-2x [2]	3-4x [3]	5-6x [4]	≥7x [5]

Management

Both:
- PUQE score 3-12 and
- No red flags

Discharge to community
- Start or up titrate antiemetic therapy and reassure regarding safety ☐
- Encourage oral hydration ☐
- Offer dietary advice eat little and often to prevent an empty stomach ☐
- Provide contact number for early pregnancy unit ☐
- Referral to perinatal mental health services where required ☐

Either:
- PUQE score ≥ 13 with no complications
- Inability to tolerate oral intake
- Community measures failed

Send to ambulatory unit if available or treat in emergency department
- Prescribe antiemetics IM or IV ☐
- Prescribe IV fluids: ☐
  - 0.9% saline +20mmol Kcl over 2 hours
- Thiamine supplementation either: ☐
  - Thiamine 100mg TDS PO
  - Pabrinex® I+II (vial of each) IV ⊗

Reassess

Any red flags:
- Any PUQE score + complications
- Inability to tolerate oral intake
- Unresponsive to outpatient management
- Clinical dehydration
- Weight loss >5% body weight
- Confirmed or suspected co-morbidity e.g. UTI or diabetes mellitus
- Co-morbidity and unable to take medications e.g. epilepsy, HIV, hypoadrenalism or psychiatric disorders

Refer for inpatient management

For all patients consider:
- Histamine type-2 receptor blockers or proton pump inhibitors if women develop GORD (safe in pregnancy) ☐
- Thiamine supplementation in those with severely reduced dietary intake to prevent Wernicke's encephalopathy ☐
- Laxatives if required for constipation ☐
- VTE risk assessment (see RCOG risk assessment tool) ☐

Pregnancy Sickness Support

HER Foundation

UK Teratology Information Service

Best use of medicine pregnancy

⊗ Trust maybe using IV thiamine see local policy

APPENDIX 5. SUMMARY FOR INPATIENT CARE

Vd. Management of Nausea and Vomiting of Pregnancy (NVP)/ Hyperemesis Gravidarum (HG) as an In-patient

Royal College of Obstetricians & Gynaecologists

Initial assessment

History:
- Previous history of NVP/HG ☐
- Ptyalism (hypersalivation) ☐
- Weight loss ☐
- Poor oral intake ☐
- Effect on quality of life ☐
- Effect on mental health/mood ☐

Consider other causes in those with:
- Abdominal pain ☐
- Urinary symptoms ☐
- Infective symptoms ☐
- Possible drug cause ☐
- Chronic H. pylori infection ☐

Examination:

Observations:
- Temperature ☐
- Heart rate ☐
- Blood pressure ☐
- Respiratory rate ☐

Physical examination:
- Signs of dehydration ☐
- Signs of malnutrition ☐
- Abdominal examination ☐
- Neurological signs ☐

Prescence of confusion, nystagmus or ataxia should raise suspicion of Wernicke's encephalopathy

Investigations:
- Urine dipstick +/- MSU *nitrites may indicate urinary tract infection* ☐
  NB. Ketones are not a marker of dehydration ☐
- Urea and electrolytes *to assess for hypo/hyperkalaemia, hyponatraemia, kidney injury* ☐
- Full blood count *infection, raised Hb or Hct may indicate dehydration* ☐
- Blood glucose *to assess for diabetes*

In refractory cases: ☐
- Thyroid function tests ☐
- Liver function tests to exclude liver disease ☐
- Bone profile to monitor calcium and phosphate ☐
- Amylase to exclude pancreatitis ☐
- VBG to exclude metabolic disturbance ☐

Diagnosis and severity assessment

Document: PUQE score /15 Weight kg

Diagnosis:

NVP:
- onset of nausea and/or vomiting in early pregnancy with no other cause is identified ☐

HG:
- Nausea and vomiting (one of which is severe) ☐
- Onset <16 weeks' gestation ☐
- Inability to eat and drink normally ☐
- symptoms limit daily activity ☐

PUQE-24 scoring system:

In the last 24 hours:

How long have you felt nauseated or sick to your stomach for?	Not at all [1]	≤1h r[2]	2-3hrs [3]	4-6hrs [4]	>6hrs [5]
How many times have you vomited?	0x [1]	1-2x [2]	3-4x [3]	5-6x [4]	≥7x [5]
How many times have you had retching or dry heaves?	0x [1]	1-2x [2]	3-4x [3]	5-6x [4]	≥7x [5]

Admission criteria and management

Admit if any of the following:
- Any PUQE score plus:
- Unresponsive to outpatient management
- Clinical dehydration
- Inability to tolerate oral intake
- Weight loss >5% body weight
- Confirmed or suspected co-morbidity e.g. UTI or diabetes mellitus
- Co-morbidity and unable to take medications e.g. hypoadrenalism, epilepsy, psychiatric disorder and HIV

Inpatient management:
- Prescribe antiemetics IM or IV — Trust maybe using IV thiamine see local policy ☐
- Prescribe IV fluids: ☐
  - 0.9% saline with potassium chlorine guided by **daily monitoring of electrolytes** ☐
- Prescribe thiamine supplementation either: ☐
  - Thiamine 100mg TDS PO or Pabrinex® I+II (vial of each) IV
- Prescribe venous thromboprophylaxis ☐
- Prescribe histamine type-2 receptor blockers or proton pump inhibitors in women with GORD ☐
- Undertake a mental health assessment +/- refer to mental health services ☐
- Schedule ultrasound scan to confirm viability, gestational age and to assess for trophoblastic disease or multiple pregnancy ☐
- Enquire regarding constipation and prescribe laxatives if required ☐
- Consider enteral or parenteral nutrition in cases where all other medical therapies have failed to sufficiently manage symptoms ☐

Antiemetic therapy

1st line Doxylamine and pyridoxine 20/20mg PO at night, increase to additional 10/10mg in morning and 10/10mg at lunchtime if required.
Cyclizine 50 mg PO, IM or IV 8 hourly
Prochlorperazine 5–10 mg 6–8 hourly PO (or 3 mg buccal) ; 12.5 mg 8 hourly IM/IV;

Promethazine 12.5–25 mg 4–8 hourly PO, IM or IV
Chlorpromazine 10–25 mg 4–6 hourly PO, IM or IV

2nd line Metoclopramide 5–10 mg 8 hourly PO, IV/IM/SC
Domperidone 10 mg 8 hourly PO; 30–60 mg daily PR
Ondansetron 4 mg 8 hourly or 8 mg 12 hourly PO; 8 mg over 15 minutes 12 hourly IV;

Women taking ondansetron may require laxatives if constipation develops

3rd line Hydrocortisone 100mg twice daily IV; then convert to prednisolone 40–50 mg daily PO, with the dose gradually tapered until lowest maintenance dose that controls the symptoms is reached

Corticosteroids should be reserved for cases where standard therapies have failed; when initiated they should be prescribed in addition to previously started antiemetics. Women taking them should have their BP monitored and a screen for DM

On discharge

- Up titrate antiemetic therapy and reassure regarding safety ☐
- Encourage oral hydration ☐
- Offer dietary advice eat little and often to prevent an empty stomach ☐
- Provide contact number for early pregnancy unit ☐

Up titration of antiemetics

- Initially select a 1st line antiemetic
- Use combinations of drugs in women who do not respond to a single antiemetic
- When up titrating add drugs as opposed to replacing them

different classes of drugs may have synergistic effects and some women will require a combination of 3+ antiemetics to control symptoms

Post-partum care, planning for future pregnancy and signposting

- Patients with severe HG are risk of PTSD if required they should be referred to appropriate services
- In future pregnancy early use of lifestyle modifications should be used
- Pre-emptive use of doxylamine and pyridoxine can be used to reduce severity of disease in subsequent pregnancy 20/20mg PO at night to be started on confirmation of positive pregnancy test and up titrated when required

- Pregnancy Sickness Support
- HER Foundation
- UK Teratology Information Service
- Best use of medicine pregnancy