

Guideline: Nausea and Vomiting

Establish the cause of the nausea and vomiting by taking a detailed history, examining the patient and performing relevant investigations.

Causes of nausea and vomiting

Higher centres:

- *Drugs*: opioids, antibiotics, chemotherapy.
- *Biochemical changes*: hypercalcaemia, hyponatraemia, renal failure, deranged LFTs, infection, tumour toxins.
- *Vestibular disturbance*: motion sickness.
- *Raised intracranial pressure*: cerebral metastases.
- *Anxiety / fear*.

Gut:

- *Pharyngeal stimulation*: cough, sputum, candida infection.
- *Gastric causes*: gastritis or ulceration, functional gastric stasis, gastroduodenal obstruction, constipation.
- Hepatomegaly, gross ascites, intestinal obstruction, abdominal or pelvic radiotherapy.

Management

If possible, treat reversible causes, eg hypercalcaemia, candida, infection, gastritis, drain tense ascites, corticosteroids in ↑ICP.

Anxiety exacerbates nausea and vomiting from any cause and may need specific treatment, pharmacological and/or psychological

Anti-emetics

Anti-emetics must be used logically and methodically.

Route of administration:

- *Oral*: if the patient is not vomiting.
- *Parenteral*: if the patient continues to feel nauseated despite oral medication or is frequently vomiting. Continuous subcutaneous infusions are given using a syringe driver and stat s/c doses can also be given. If an intravenous route is already available, stat injections can be given intravenously. If symptoms settle, the medication can be converted to an oral route.

Step 1: Prescribe the first line anti-emetic for the most likely cause.

First line anti-emetics

| Drug | Dose | Indication | Side-effects |
|--------------------------------|--|--|--|
| Cyclizine | 50mg po tds 150mg sc/24hrs | Vestibular Bowel obstruction ↑ICP | Dry mouth Sedation |
| Haloperidol | 1.5mg po od /bd 3 to 5mg sc/24hrs | Drugs eg. Opioids Biochemical eg. ↑Ca, renal failure, deranged LFTs, infection, tumour toxins | Sedation Movement disorders (Contraindicated in Parkinson's) |
| Metoclopramide (prokinetic) | 10-20mg po tds 30-100mg sc/24hrs | Gastric stasis Squashed stomach | Movement disorders (oculogyric crisis) (Contraindicated in complete bowel obstruction) |

It has been recommended that metoclopramide and cyclizine should not be given together because of the anticholinergic effect of the latter abolishes the prokinetic effect of the former. Be that as it may, the combination is used successfully on occasion.

Optimise the dose of anti-emetic every 24 h, taking PRN use into account and the patient's own rating of nausea and vomiting.

Step 2: If no change after 24-48hr, after optimising the dose, have you got it right? Change to an alternative first-line anti-emetic or combine 2 first-line anti-emetics.

Step 3: If no change after 24-48 hr, after optimising doses, think again, have you got it right? Consider changing to second line anti-emetic.

Second line anti-emetics

Levomepromazine: This is a phenothiazine which at low doses is used as a broad spectrum anti-emetic. Dose 6.25 mg – 12.5 mg PO daily/bd. Given subcutaneously as 6.25 mg stat or 6.25 mg - 25 mg over 24 hours. Doses above 25 mg are occasionally used. Side effects: Dose related sedation, hypotension and dry mouth.

5HT₃ antagonists, eg Ondansetron 4 to 8 mg po/iv bd. These anti-emetics are used specifically for chemotherapy and radiotherapy induced nausea and vomiting. Side effects: constipation and flushing.

Other agents

Dexamethasone: Dexamethasone is used in conjunction with anti-emetics in ↑ICP and gastric outlet obstruction caused by hepatomegaly. It can also be used in resistant nausea and vomiting. Dose eg. 6-12mg sc. If an improvement is not seen in 3-4 days it should be discontinued.

Domperidone: this is used as a prokinetic anti-emetic but without risk of extrapyramidal side-effects. Not as effective as metoclopramide. Can be given rectally. Is first line treatment in Parkinson's disease.

Hyoscine Hydrobromide: As well as having anti-spasmodic properties it is an anticholinergic anti-emetic at the vomiting centre level. It is a common treatment for motion sickness but has limited usefulness because it is sedative even in small doses. It can reasonably be used for this purpose at the end of life.