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PALLIATIVE CARE

GUIDELINES

FOR A HOME SETTING IN INDIA

NAUSEA AND VOMITING

INTRODUCTION

Nausea and vomiting are common but distressing gastro-intestinal symptoms in palliative care patients and worsens the quality of life.
Nausea is an unpleasant subjective sensation with a feeling of need to vomit, often accompanied by autonomic symptoms such as pallor, sweating, salivation, and tachycardia.
Retching is the rhythmic spasmodic contractions of diaphragm and abdominal muscles facilitating regurgitation into the oesophagus.
Vomiting is the forceful expulsion of gastric contents by sustained contraction of the abdominal muscles and the diaphragm.

The common causes of nausea and vomiting in patients with advanced cancer are:
Local causes

- Mediated by effects on the gastrointestinal tract:
  - Oral candidiasis
  - Gastric stasis
  - Oesophageal causes: extrinsic or intrinsic compression, mucosal inflammation due to reflux, or infection
  - Gastric mucosal inflammation (NSAIDs, steroids, antibiotics, bleeding, ethanol, stress)
  - Gastric outflow obstruction:
    - Obstruction (partial or complete)
    - Mass effect (hepatic or another tumour mass, carcinomatosis)
    - Pyloric dysfunction
  - Bowel obstruction
  - Constipation

Systemic causes

- Mediated by effects on the gastrointestinal tract:
  - Delayed emptying (medications, opioids, amitriptyline, hyoscine)
  - Vagal stimulation-radiotherapy to abdomen/pelvis, intestinal distension, cytotoxic chemotherapy, ascites, urinary retention, cough
- Mediated by chemical mechanism (usually via CTZ):
  - Medications:
    - Opioids
    - Antibiotics
    - Anticonvulsants
    - Chemotherapy

    - Biochemical:
        - Hypercalcaemia
        - Uraemia
        - Liver failure
    - Toxins (Tumour factors, infection)
- Cerebral
    - Raised intracranial pressure (brain metastases, leptomeningeal disease, intracranial bleed)
    - Cranial radiotherapy
      Infection
- Vestibular Apparatus
    - Motion sickness
    - Cerebellar tumour/metastases
- Systemic infections
    - Gastroenteritis
    - Sepsis
- Others
    - Anxiety

ASSESSMENT

- Assessment must determine the underlying aetiology, effectiveness of the treatment and impact on quality of life for the patient and their family (***refer to the Guideline - Symptom Assessment***)
- Use Edmonton Symptom assessment scale to assess the symptom and the therapeutic outcome
- Clinical examination
    - Assess hydration
    - Look for signs of infection e.g. fever, tachycardia
    - Presence of jaundice
    - Examine the oral cavity
    - Neurological examination
    - Abdominal examination - tenderness, distension, visible peristalsis, ascites, hepatomegaly, masses, bowel sounds
    - Rectal examination - look for rectal impaction and the signs of high constipation with or without overflow diarrhoea ('ballooned' empty rectum, faecal incontinence, faecal matter on the glove)
- Laboratory investigations (as appropriate)
    - X-ray abdomen (erect) - in suspected bowel obstruction and constipation
    - Serum urea, electrolytes, liver function test

- CT abdomen - in suspected bowel obstruction - especially if palliative surgical intervention is considered

MANAGEMENT

Principles of management

- Identify the likely cause of nausea/vomiting to choose the most appropriate anti-emetic. (The pathway, the neurotransmitter involved, the most potent antagonist is provided in Table 1)
- Choose the appropriate route of administration
- Give the medication regularly with a rescue dose and titrate the dose
- Consider whether the cause is reversible
  - If reversible, then continue anti-emetics until the cause is reversed
  - If irreversible, then anti-emetic medication will need to be maintained long term
- Avoid using pro-kinetic (metoclopramide) and anti-cholinergic (hyoscine) simultaneously due to their opposing actions
- Prophylactic anti-emetics should be considered when nausea and vomiting are common side-effects (with opioids)
- A single agent is sufficient in most patients; others will need two or more and should belong to different classes
- In persistent vomiting, the subcutaneous route is the preferred route of administration
- Avoid use of prokinetic in bowel obstruction in the presence of colic. It can be used in the absence of colic (keep careful watch for presence/development of colic)
- Review
  - Has the cause been correctly identified?
  - Is the dose correct?
  - Is the route appropriate?
  - Compliance?
  - Any new changes – symptoms/signs?

Explanation and education

- Explain to the patient and family the likely cause/s of nausea/vomiting, that it may be multifactorial and it may take different strategies to manage
- Dietary advice
  - Remove intolerant foods from the diet
  - Reduce exposure to foods that emit strong odours
  - Avoid spicy, fatty and solid foods
  - Try carbohydrate meals, which are better tolerated

- Restrict solid food intake for patients with bouts of vomiting, secondary to gastric distension. Instead start with sips of water or other fluids and/or suck on ice chips, popsicles etc. When the nausea/vomiting has settled, gradually switch from fluids to semi-solids and then to normal diet
- Try small frequent bland meals
- Allow foods that the patient prefers
- Use cool, fizzy drinks

- Explain the purpose of each medication, dosing and rescue dose and ensure compliance
- Provide information on non-pharmacological measures

Non-pharmacological measures

- Reduce exposure to strong odours; use air fresheners and deodorizers
- Maintain good oral hygiene; especially after a bout of vomiting
- Advise intake of ginger or ginger with honey, boiled with water as a concoction
- Instruct the patient to be in a sitting position while eating and to avoid lying down immediately after food intake
  Advise the patient to seek counselling for psychosocial care and anxiety

Pharmacological measures

Mediated by chemical mechanism (usually via CTZ)

Cause	Clinical features	Receptor/Putative site of action	Medication
Cytotoxic chemotherapy	Persistent nausea, aggravated by the sight and smell of food, not relieved by vomiting	5HT3/CTZ	Ondansetron 8mg PO, IV or S/C q8h
Morphine, digoxin, hypercalcaemia, uraemia		D2/CTZ	Haloperidol 1.5-5.0mg PO or S/C per day Metoclopramide 10-20mg PO, S/C, IV q6h

Mediated by effects on the gastrointestinal tract

Causes	Clinical features	Receptor/Putative site of action	Medication
Radiotherapy to abdomen, pelvis, intestinal distension, cytotoxic chemotherapy	Intermittent nausea associated with early satiety and postprandial fullness or bloating. The	5HT3 / vagal receptor blockade	Ondansetron 8mg PO, IV or S/C q8h

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Gastric irritants	nausea is relieved by vomiting that is usually small volume, occasionally forceful, and may contain food. In GOO, the vomitus volume may be large	D2 / Prokinetic	Metoclopramide 10mg PO, S/C, IV q6h-q8h Domperidone 10mg PO q6h - q8h
		Motilin / Prokinetic	Erythromycin 250mg PO q6-8h
Tumours		Anti-inflammatory	Dexamethasone 8mg od, PO, IV or SC daily (Avoid in those with melena/ hematemesis or the risk of bleeding)
Gastric inflammation- NSAIDs, steroids		H2 / Antihistamine	Tab. Ranitidine 150-300mg PO q12h
		Proton pump inhibitor	Pantoprazole 40mg PO daily or q12h
Tumours, gastric outlet obstruction (GOO)		Ach / Anticholinergic	Hyoscine butyl bromide 20mg PO, S/C q4h In partial GOO, Metoclopramide 10mg PO, S/C, IV q6h - q8h

Mediated through CNS

Causes	Clinical features	Receptor/Putative site of action	Medication
Raised ICP secondary to space occupying lesion or base of skull tumour	Early morning nausea and vomiting associated with headache	Mechanoreceptor / higher cortical centres	Dexamethasone 8-24mg PO, IV or S/C daily, reducing after 3 days, aiming to stop or lowest maintenance dose Hyoscine hydro bromide 200-400mcg S/C daily or 0.5-1mg/72 hours via transdermal patch
Fear/anxiety	Nausea and vomiting associated with anxiety	GABA, 5HT / higher cortical centres	Lorazepam 0.5-1 mg PO, S/C, SL hsod Diazepam 2-5mg PO, S/C hsod

Mediated through Vestibular Apparatus

Causes	Clinical features	Receptor/Putative site of action	Medication

Motion, vertigo, cerebellar tumours	Nausea aggravated by movement, including motion sickness or even just turning the head	H1 / Vestibular apparatus	Cinnarizine 30mg PO stat, then 15mg PO tid Dimenhydrinate 25mg tid Promethazine 25mg tid
		Ach / Vestibular apparatus	Prochlorperazine 5-15mg PO daily
Meniere's disease		Vestibular/auditory/aural	Betahistine 16mg PO tid

- **Malignant Bowel Obstruction (*refer to the Guideline - Malignant bowel obstruction*)**
- **Unexplained Nausea and Vomiting**
  - Metoclopramide – 30-40mg/24 hours by S/C infusion
  - A trial of Dexamethasone 8mg PO, IV or S/C OD daily. If helpful, reduce after 3 days and continue lowest maintenance dose. If not helpful, stop
  - It is sometimes worth considering a "Broad spectrum" anti-emetic - Olanzapine
    - Start with 1.25-2.5mg PO stat, q2h prn and hs
    - Increase to 5mg hsod
    - Max - 5mg bd

References

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