

# Management of Nausea and Vomiting

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# Content of the Session

- Causes of Nausea and vomiting
- Physiology of nausea and vomiting
- The anti-emetics
- Management

# Causes of Nausea and Vomiting

## Cerebral Causes

- Raised intracranial pressure
- Anxiety and anticipation
- Degenerative Brain disease: MS, AIDS

## Chemical Causes

- Drugs: antibiotics, NSAIDS, steroids
- Chemotherapy
- Infection
- Metabolic
  - Uraemia
  - Hypercalcaemia
  - Hyponatraemia

# Causes of Nausea and Vomiting

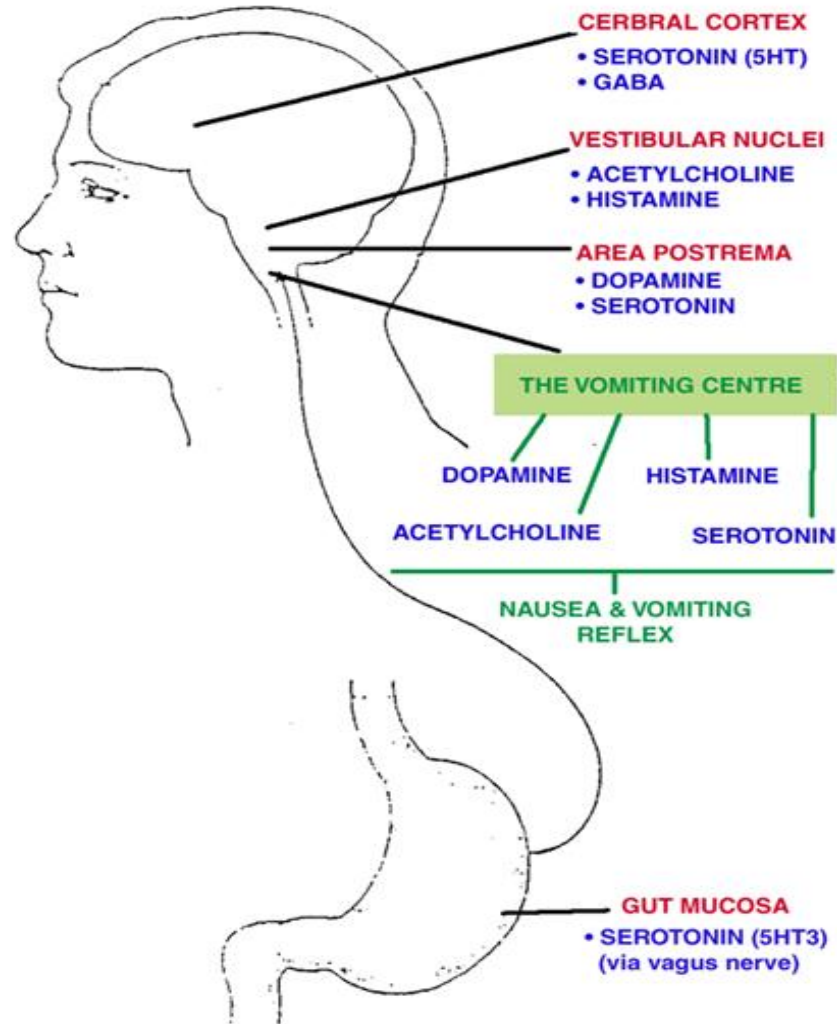
## Oropharyngeal Causes

- Cough
- Regurgitation
- Pharyngeal irritation e.g. candida

## Gastrointestinal Causes

- Gastroparesis
  - Drugs
  - Paraneoplastic
- Gastric irritation/ulceration
- Hepatomegaly
- Ascites
- Bowel obstruction
- Constipation

# Pathophysiology



# Prokinetics

Metoclopramide 10-20mg tds-qds

Domperidone 10mg bd-tds **after** food

(5HT<sub>4</sub> Agonist + Dopamine (D<sub>2</sub>) antagonist)

Side Effects:

- tardive dyskinesia (M)
- QT prolongation/dysrhythmias (D)



# Dopamine Antagonists

Haloperidol 0.5 - 3mg

Levomepromazine 6/6.25mg nocte (po/sc)  
(Metoclopramide)

## ■ Side Effects (extrapyramidal)

- Muscle stiffness
- Tremor
- Reduced movements
- Hypothermia and hypotension
- sedation



# Histamine Antagonists

Cyclizine 25 – 50 bd-tds; 100-150 sc (WFI)

Levomepromazine 2.5 – 12.5mg po/sc

- SIDE-EFFECTS (Anticholinergic)
  - Drowsiness
  - Caution in elderly: postural hypotension, memory impairment effects, urinary retention, narrow angle glaucoma, extrapyramidal effects
  - Cause tachycardia in severe heart failure - avoid



# Serotonin (5HT3) Antagonists

Granisetron 1-2 mg od po/sc; patch 3.1mg/24hrs up to 7 days

Ondansetron 8mg bd-tds po/sc

- Use in “acute emesis” post chemotherapy; role less clear in palliative care

## SIDE-EFFECTS

- Constipating ++
- Can prolong QT interval in combination with prokinetics
- Headache (10%)



# Anticholinergics

Hyoscine Hydrobromide (centrally acting)

Hyoscine Butylbromide / Buscopan (anti-secretory)

Glycopyrrolate

## ■ SIDE-EFFECTS

- Dry mouth/Stuffy nose/Blurred vision
- Sedation/agitated delirium
- Postural hypotension
- Urinary retention

# Additional Drugs

- Steroids: can potentiate anti-emetics
- Benzodiazepines
- Octreotide
- Nabilone (Cannabinoid)
- aprepitant

# Management of Nausea and Vomiting

- Diagnose cause(s) for the nausea and vomiting (including bloods if appropriate)
- Treat reversible causes and exacerbating factors e.g. constipation
- Choose an appropriate anti-emetic
- Choose the appropriate route
- Review the response and, if necessary, change the management

# Non-Drug Measures

- Calm environment
- Reduce food smells and malodor of stomas/wounds
- Dietary changes e.g. smaller meals more frequently
- Sea bands/ginger
- Acupuncture/pressure

# Correct Reversible Causes

- Stop gastric irritant drugs and treat gastritis
- Treat cough and constipation
- Treat raised intracranial pressure (dexamethasone and radiotherapy)
- Treat hypercalcaemia with rehydration and Bisphosphonates if appropriate
- Address anxiety and emotional distress
- Insight, information and expectations

# Prescribe an Appropriate Anti-Emetic

- Dependent on the cause of nausea and vomiting
  - Start with first line anti-emetic
  - Give regularly and prn options
- Parenteral route necessary if unable to absorb
  - Stat dose injections
  - Continuous subcutaneous infusion

# Prescribing Anti-Emetics

- Optimise the dose every 24 hours
- After 24-48 hours, if little or no benefit on optimum doses:
  - Do you have the correct cause?
    - No : change to an appropriate anti-emetic
    - Yes: add in or substitute the 2nd line anti-emetic
- Most can be given SC
- Doses generally the same if given PO,SC or IV.



# Gastric Stasis

## Symptoms

- Low grade nausea made worse on eating
- Large volume vomits
- Early satiety
- Belching
- Reflux/epigastric fullness/tenderness
- Hiccups
- Succussion splash

## Management

- Metoclopramide 30-100mg /24 hours
- Adjuncts:
  - PPI
- Persistent
  - Switch to Buscopan (anti-secretory)
  - NG tube

# Bowel Obstruction **without** Colic

## Symptoms

- Variable nausea
- Vomiting dependent on site of obstruction
- Abdominal distension
- Background aching pain
- Constipation
- Absent or hyperactive bowel sounds

## Management

- 1st line: metoclopramide 30-100mg / 24hrs
- Adjuncts:
  - Dexamethasone
  - Granisetron
  - Octreotide:300-600 mcg/24 hrs (max 1000mcg)
  - morphine, docusate



# Management of Bowel Obstruction **with Colic**

- 1st line: Cyclizine 100 - 150mg/24hour  
PLUS Buscopan 30 -120mg/ 24hours  
(anti-colic, anti-secretory)
- 2nd line: Cyclizine **and** Haloperidol 1.5 - 3mg **or** Levomepromazine 5-12.5mg/24hours

# Management of Chemical Nausea

- Significant nausea/variable vomiting
  - Few other GI-related symptoms
  - Biochemical evidence
- 
- 1st line: Haloperidol 1.5 - 5mg / 24 hours
  - 2nd line: Add in Cyclizine or substitute with Levomepromazine

# Raised Intracranial pressure

## Symptoms and Signs

- Early morning headaches
- Predominant nausea
- Intermittent vomiting
- Papilloedema
- Neurological deficit and seizures

## Management

- 1st line: Dexamethasone and Cyclizine
- 2nd line: Add in Haloperidol
- 3rd line: Substitute with Granisetron 1mg

# Motion-Related Nausea and Vomiting

- 1st line: Hyoscine Hydrobromide
- 2nd line: Cyclizine

# Nausea and Vomiting of Indeterminate Cause

- 1st line: Levomepromazine
- 2nd line: Haloperidol AND/OR Cyclizine
- 3rd line: Consider: Metoclopramide, Granisetron, Dexamethasone, Diazepam/lorazepam

# Syringe Driver Compatibilities

- Try not to mix more than 3 drugs
- Cyclizine can be problematic
  - Irritant
  - Precipitation
- If in doubt
  - use water
  - ask pharmacist / hospice
- Compatibility charts
- [www.palliativesdrugs.co.uk](http://www.palliativesdrugs.co.uk)



# Other Things to Consider

- Nasogastric tube
- Venting Gastrostomy
  
- Some patients continue to be nauseated
- Some patient continue to vomit

# Choice of anti-emetics in Parkinson's Disease

- Domperidone 10mg bd if oral route possible
- Less harmful option otherwise if 5-HT<sub>3</sub> antagonist **but** narrow spectrum of action
- Granisetron patch available (but off license and costly).
- Could try cyclizine at reduced dose (25mg tds)