ABDOMINAL
DRUGS RAID- ANTIEMETICS

Physiology of vomiting

- The Area Postrema (AP) of the medulla is the vomiting centre
- Lies at the inferoposterior base of the fourth ventricle
- It may be stimulated by several mechanisms:
  - It is outside of the blood brain barrier and contains many D2 Dopaminergic, 5-HT3 Serotonergic, H1 Histamine, Opioid & Acetylcholine receptors so can be directly stimulated (or inhibited) by blood borne substances
  - Vestibular system (via CNVIII) contains H1 Histamine & Muscarinic acetylcholine receptors
  - Vagal & Enteric neurones contain 5-HT3 serotonin receptors which are activated by noxious stimuli e.g. infection and drugs in the gut or gag reflex (Vagus)
  - The higher CNS stimuli like anxiety can stimulate AP via neurokinin receptors
- AP causes stimulation of motor, sympathetic & parasympathetic pathways involved in vomiting
- Antiemetics work by action at one or more of these receptors

Ondansetron

Mechanism of action
- 5- HT3 serotonin receptor antagonist
- Acts both peripherally on vagal nerve fibres and centrally
- Main effect thought to be peripheral

Dose
- Initially 4mg IV/IM

Side effects
- Prolonged QT if used with other QT prolonging drugs, transient dizziness & visual disturbances, flushing

Contraindications
- Congenital Long QT syndrome
### Cyclizine

**Mechanism of action:**
- Histamine H1 receptor antagonist (also has central antimuscarinic action)
- Unclear of exact site of action, may act at vestibular system and centrally

**Dose**
50mg IV/IM/PO

**Side effects**
Can cause a ‘high’ if bolused and frequent users may become addicted, anaphylaxis, extrapyramidal symptoms, hypersensitivity reactions

**Contraindications**
Acute porphyrias, Neonates

**Caution**
Epilepsy, patients at risk of acute angle closure glaucoma

### Metoclopramide

**Mechanism of action**
- Anti-emetic: Central Dopamine D2 antagonist
- Prokinetic: Muscarinic agonist

**Dose**
10mg IV/IM/PO

**Side effects**
Extrapyramidal effects, Neuroleptic malignant syndrome, gynaecomastia & galactorrhoea (with high doses or prolonged use)

**Contraindications**
Within 4 days of abdominal surgery, GI perforation or obstruction Parkinson’s disease

Should not be prescribed for more than 5 days

### Prochlorperizine (Stemetil, Buccastem)

**Mechanism of action**
- Dopamine D2 receptor antagonist

**Dose**
Acute vomiting: 12.5mg IM
Prevention (e.g. vertigo or nausea): 5-10mg Buccal max TID

**Side effects**
Rare in short term use
Potentially causes acute dystonic reactions or neuroleptic malignant syndrome

**Contraindications**
Avoid in children under 10kg

### Hyoscine Butylbromide

**Mechanism of action**
- Antimuscarinic- reduces nausea & vomiting and GI spasm

**Dose**
20mg IV/IM/PO

**Side effects**
Constipation, skin flushing, urinary retention, pupil dilation & photophobia

**Contraindications**
GI obstruction/ ileus, urinary retention, toxic megacolon, severe UC