

## Analgesics: opioids

### Morphine

Morphine is the standard analgesic for severe pain, especially from trauma. As well as providing analgesia, it ↑ venous capacitance and so is useful in pulmonary oedema due to LVF.

Morphine frequently causes nausea and vomiting in adults—therefore give with an antiemetic (cyclizine 50mg iv/im or prochlorperazine 12.5mg iv). Antiemetics are not usually necessary in children aged <10yrs.

290 **Other side-effects** of opioids include drowsiness and constipation. Pinpoint pupils can complicate neurological assessment. Respiratory depression and hypotension occur with large doses. The effects of opioids are reversed by naloxone (p188).

In acute conditions, give morphine by slow iv injection, which provides rapid but controlled analgesia. The dose varies with the patient and the degree of pain. Titrate the dose depending on the response: 2mg may be adequate in a frail elderly lady, but sometimes 20mg is required in a young fit person with severe injury. Dilute morphine with 0.9% saline to 1mg/mL and give it slowly iv (1–2mg/min in adults): initially half the expected dose and then in 1mg increments until pain is relieved. Label the syringe clearly. Give further analgesia if pain recurs. iv morphine dose in children is 100–200 micrograms/kg, repeated as necessary. Patient- or nurse-controlled analgesia using a computerized syringe pump is very good for postoperative analgesia, but not appropriate in A&E.

**IM injections** provide slower and less controlled effects than iv analgesia: avoid their use, especially in shocked patients. IM morphine may be useful in small children needing strong analgesia but not iv fluids (eg while dressing superficial burns).

Morphine may also be given orally as *Oramorph® oral solution*:

- child aged 1–5yrs: max dose 5mg (2.5mL)
- child aged 6–12yrs: max dose 5–10mg (2.5–5mL)

**Codeine** is given orally for moderate pain (30–60mg 4 hrly, max 240mg daily) and has side effects similar to morphine. Codeine may also be given IM. Dihydrocodeine is similar to codeine.

**Diamorphine (heroin)** has similar effects to morphine. There are promising reports of the use of intranasal diamorphine in children.

**Fentanyl** is a short-acting opioid popular with anaesthetists.

**Nalbuphine** is not a controlled drug and is used in prehospital care. It is a partial antagonist of opioids. If pain recurs after nalbuphine has been given, one may need larger than usual doses of morphine to achieve analgesia.

**Pethidine** provides rapid but short-lasting analgesia, but is less potent than morphine. It is sometimes used for renal or biliary colic in preference to morphine, which is said to cause smooth muscle spasm. Pethidine is given slowly iv, titrated as necessary (usual adult dose ~50mg iv), or less effectively IM (50–100mg). Give an antiemetic with it.

## Analgesia and anaesthesia

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291

## Causes of acute abdominal pain

There is frequently much initial diagnostic uncertainty in patients presenting with abdominal pain. Indeed, many patients get better without any definite cause being identified ('non-specific' abdominal pain). Remember also that a patient is much more likely to have a common condition (perhaps with an atypical presentation) rather than a very rare condition. Thus, a patient presenting with atypical abdominal pain is more likely to have acute appendicitis than tabes dorsalis or acute intermittent porphyria. The following conditions are seen relatively frequently:

518

### Surgical

- acute appendicitis
- cholecystitis and biliary colic
- pancreatitis
- peptic ulcer disease (including perforation)
- ruptured abdominal aortic aneurysm
- mesenteric infarction
- diverticulitis
- large bowel perforation
- intestinal obstruction from various causes
- ureteric calculi
- urinary retention
- testicular torsion
- intussusception

### Gynaecological

- ectopic pregnancy
- PID
- rupture/torsion of ovarian cyst
- endometriosis
- Mittelschmerz

### Medical

- MI
- pneumonia
- PE
- aortic dissection
- acute hepatitis
- DKA
- UTI
- herpes zoster
- irritable bowel syndrome

## Surgery

### Causes of acute abdominal pain

519