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Improving the treatment of pain at McMaster Children's Hospital

Morphine is the preferred oral opiate for the treatment of acute pain

Morphine has important effectiveness and safety advantages and is preferred over codeine (which historically had been the most commonly used oral opiate at McMaster Children's Hospital). Codeine is a weak opiate analgesic with minimal intrinsic analgesic activity; it must first be metabolized to morphine which provides most of the analgesic effect. Because of the need for metabolism:

- Codeine has variable efficacy. Up to 10% of the population does not effectively metabolize codeine to morphine, resulting in poor pain control.
- Codeine has caused toxicity (including deaths) due to high levels of morphine in ultra-rapid metabolizers (up to 40% in some populations).
- Codeine has a higher potential for drug interactions than other opiates that may result in either reduced effectiveness or increased levels of morphine.

To avoid the unpredictably variable analgesia and potential for toxicity, a simpler approach is to use morphine.

Hydromorphone or oxycodone are alternatives for patients who cannot tolerate morphine because of adverse effects.

Dosing Of Oral Opiates

| Opiate | Recommend Oral Dose (given q4h) | Usual Maximum Initial Dose | Formulations Available |
|-------------------------|--|----------------------------|---|
| Morphine | 0.2-0.5 mg/kg | 10-15 mg | 1 mg/mL oral liquid 5, 10 mg tablets |
| Hydromorphone | 0.03-0.08 mg/kg | 2-3 mg | 1 mg/mL oral liquid 1, 2, 4 mg tablets |
| Oxycodone | 0.05-0.15 mg/kg | 5-10 mg | 5, 20 mg tablets |
| Oxycodone/Acetaminophen | 30-44 kg: 1 tablet/dose > 44 kg: 1-2 tablets/dose | | Oxycodone 5 mg with acetaminophen 325 mg tabs |