The principles of pain management for children

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Pain receptors - nociceptors

- Receptors are present all over the body that are sensitive to noxious stimuli
  - skin = polymodal receptors: touch/pressure, heat and chemicals
  - cornea, dentine, periosteum = unimodal receptors: pain only
- All sensory nerves will produce pain sensation if stimulated sufficiently
Harmful effects of unrelieved pain

Systems:

- **Cardiovascular:** $\uparrow$HR $\uparrow$BP $\uparrow$CO $\uparrow$O2 consumption
- **Respiratory:** $\uparrow$RR $\downarrow$flow/vol $\downarrow$SaO2
- **Endocrine:** $\uparrow$cortisol $\uparrow$adrenaline $\uparrow$glucagon $\uparrow$BSL
- **Gastrointestinal:** $\downarrow$gastric & gut motility
- **Musculoskeletal:** tension, spasm, fatigue
Principles of pain management

- Follow the WHO analgesic ladder
- Combined analgesia is more effective than a single modality
- Minimising opioids does not need to mean no analgesia
WHO analgesic ladder (modified 2012)

- **Mild to Moderate pain:**
  - Non-opioid +/- NSAID/adjuvant

- **Moderate to Severe pain:**
  - Non-opioid + NSAID/adjuvant
  - Regional blockade
  - Strong opioid

Increasing pain stimulus:
- Level 1
  - Non-opioid +/- NSAID/adjuvant
- Level 2
  - Non-opioid + NSAID/adjuvant
  - Strong opioid
  - Regional blockade
Causes of surgical pain

- Underlying reason for surgery
- Surgical incision
- Position during surgery
- After surgery care
- Complications
- Physiotherapy/mobilisation
Causes of medical pain

- Investigations
- Treatment
- Disease process
- Secondary complications
- Organ distension or compression
- Nerve damage or compression
Causes of procedural pain

- Needles
  - IV, bloods, LP, SPA, biopsy
- Tubes
  - Catheters, drain tubes, NGT, MCU
- Position
  - For LP, for MCU, colonoscopy
- Emotional aspects…
Non-opioid analgesia

- AnGel/EMLA
- paracetamol
- NSAIDs eg ibuprofen, ketorolac
- tramadol
- local anaesthesia blocks
Opioid analgesia

Oral

• morphine/MS Contin
• oxycodone IR/oxycontin SR

Intravenous

• morphine
• fentanyl
• hydromorphone
Analgesia for procedures

- **IV’s** AnGel cream/EMLA/BuzzyBee
- **lumbar punctures** AnGel cream/EMLA/local anaesthetic
- **earache** local anaesthetic drops
- **eyes** local anaesthetic drops
- **systemic** opioids/non-opioids/NSAIDs
- **topical** AnGel cream/EMLA/local anaesthetic gel
- **nasopharynx** local anaesthetic spray
Optimising analgesia

- Administer analgesia
- Utilise other comfort measures
- Review within short period ie at expected peak effect of drug
- Don’t assume the analgesia has worked
- Take action if analgesia is ineffective
- Document findings clearly for others
• RCH pain management info:

**pain management**

**sucrose guideline**

**comfort kids**
Pain control must be based on scientific fact, not on personal beliefs or opinions.
Finally…

Optimal pain management is the right of all patients and the responsibility of all health professionals.