

Morphine vs Hydromorphone vs Oxycodone vs the Patch

The spectrum of available opioids has increased. Why do we need alternative opioids?

- Concept of individual variability in opioid response
 - relative intensity of analgesic and toxic effects
 - spectrum of toxicities experienced
- } varies with different opioids within the same individual and between different individuals on the same opioid

May be due to:

- Genetically - determined expression of opiate receptor subtypes
- Incomplete cross-tolerance 2nd to differential receptor subtype affinity or efficacy
- Opioid metabolite accumulation
- Pain mechanism - specific opioid response

Recent proliferation of reports → improvement in analgesia-toxicity balance with opioid switch.

Morphine: (immediate release - Morphine HP, Statex, MOS, MS-IR, Morphitec; slow release - MS Contin, M-Eslon, MOS-SR, Oramorph SR, Kadian)

- preferred routes: oral, subcutaneous, rectal
- the standard/benchmark opioid, usual first choice
- 10x more potent mg for mg than codeine
- parenteral maximum concentration: 50 mg/ml

Hydromorphone: (immediate release - Dilaudid, PMS-Hydromorphone; slow release - Hydromorph Contin)

- preferred routes: oral subcutaneous, rectal
- approx. 5x more potent mg for mg than morphine
- parenteral maximum concentration: 100 mg/ml
- the usual alternative to morphine

Oxycodone: (immediate release - Supeudol; slow release - OxyContin)

- preferred routes: oral subcutaneous, rectal
- originally introduced in combination with ASA (Percodan, Oxycodan, Endodan) or Acetaminophen (Percocet, Oxycocet, Endocet, Roxicet) for moderate pain.
- ↓ hallucinations reported in studies.
- approx. 1.5x more potent mg for mg than morphine (controversial)
- parenteral maximum concentration: 50-60 mg/ml

Fentanyl: (transdermal - Duragesic; parenteral - Sublimaze)

- high lipid solubility
- 50-100x as potent as morphine
- transdermal patch convenient in patients with stable pain control. Caution advised in uncontrolled pain syndromes (not suitable for rapid titration)
- possible ↓ in constipation and sedation
- GI withdrawal syndrome described with switch to patch
- conversion ratio uncertain (use published conversion table)
- no convenient form for rescue doses
- subcutaneous infusions → pump needed for continuous infusion
→ high cost of drug

Consider switching drug when opioid toxicity develops eg: sedation, delirium, hallucinations, myoclonus.

→ calculate an equianalgesic daily dose of the new opioid, reduce this by 20-30% to account for incomplete cross tolerance between opioids, divide into multiple daily doses at regular intervals (q4h for immediate release opioids). Provide approx. 10% of the total daily dose available as a rescue dose.

REMEMBER: For referrals, questions, or telephone consultations call 496-1300 weekdays and weekends.

Palliative Care Tips are now available on our Website: www.palliative.org