

GENERAL CONSIDERATIONS

- **Opioids have their time and place, but they are generally NOT appropriate first-line agents.** Hyperalgesia with chronic use, significant side effects (resp depression, nausea/vomiting, constipation), addictive (gateway to heroin).
- **Use 2-3 different non-opioid medications at the same time instead of morphine alone.** Using different classes of analgesic agents with different pharmacologies has been shown to create a synergistic effect by targeting multiple pain receptors. This also allows you to use smaller doses of each individual agent, which decreases the potential for side effects.
- **Consider ketamine.** Start with 0.2-0.3 mg/kg IV bolus over 10 min, then IV drip at 0.1-0.2 mg/kg/hr.
- **Consider a regional nerve block.** Great for dental pain, abscesses, shoulder dislocations, hip fractures.

NON-OPIOID AGENTS

| | RECEPTORS | PROS | CONS |
|-------------------|----------------------|---|---|
| NSAID | • COX 1/2 Inhibitor | • | • Increased risk of bleeding. • Avoid in elderly. |
| ACETAMINOPHEN IV | • COX 2/3 Inhibitor | • 1g acetaminophen IV is equivalent to 10g morphine IV with fewer adverse/side effects | • Takes 15 minutes to infuse. • Dose is not titratable. • Very expensive. |
| KETAMINE IVP/DRIP | • NMDA Antagonist | • | • |
| GABAPENTIN PO | • GABA | • | • Slow onset (hours to days) |
| NITROUS OXIDE | • NMDA Antagonist? | • 70/30 mixture does not have euphoric effect of 50/50 mixture and has less risk for abuse • Rapid on, rapid off | • Not available in US due to abuse of 50/50 mixture |
| LIDOCAINE IV | • Na Channel Blocker | • | |

A SAMPLING OF PAIN PROTOCOLS

| | PILLS | IV PUSH / PIGGYBACK | DRIPS |
|--------------------------|--|--|--|
| ABD PAIN (NON-TRAUMATIC) | • Ibuprofen 400 mg PO | • Ketorolac 10-15 mg IVP • Acetaminophen 1g IVPB over 15 min • 2% Lidocaine 1.5 mg/kg IVPB over 10-15 min | • Ketamine 0.3 mg/kg IV bolus over 10 min, + IV drip at 0.15 mg/kg /hr |
| ABD PAIN (TRAUMATIC) | | • Acetaminophen 1g IVPB over 15 min | • Ketamine 0.3 mg/kg IV bolus over 10 min + IV drip at 0.15 mg/kg /hr |
| BACK PAIN | • Ibuprofen 400-800 mg PO • Acetaminophen 1000mg PO • Cyclobenzaprine 10mg PO • Diazepam 5 mg PO | • Ketorolac 10-15 mg IVP • Acetaminophen 1g IVPB over 15 min • 2% Lidocaine 1.5 mg/kg IVPB over 10-15 min | • Ketamine 0.3 mg/kg IV bolus over 10 min + IV drip at 0.15 mg/kg/hr • Clonidine 0.3-2 mcg/kg/hr drip |
| HEADACHE | • Ibuprofen 400-800 mg PO | • Metoclopramide 10 mg IVP • Diphenhydramine 25-50 mg IVP • Prochlorperazine 10mg IVP • Ketorolac 10-15 mg IVP • Sumatriptan 6mg SQ • Haldol 2.5 mg IVP • REFRACTORY: Propofol 10mg IVP Q5min with max 50-80mg | • REFRACTORY CASES: Ketamine 0.2-0.3 mg/kg IV short infusion over 10 min |
| NEUROPATHIC PAIN | • Ibuprofen 400-800 mg PO • Gabapentin 100-300 mg PO • Prednisone 25-50 mg PO • Clonidine 0.1-0.2 mg PO | • Ketamine 0.3 mg/kg IVPB over 10 min, + IV drip at 0.15 mg/kg /hr • 2% Lidocaine 1.5-2.5 mg/kg /hr drip over 2-4 hours | • Dexmedetomidine-0.2-0.3 mcg/kg/hr drip • Clonidine-0.3-2 mcg/kg/hr drip |
| MUSCULAR PAIN | • Ibuprofen 400-800 mg PO • Acetaminophen 500-1000mg PO • Naproxen 375 mg PO | • Ketorolac-10-15 mg IVP • Acetaminophen 1g IVPB over 15 min | • Ketamine-0.3 mg/kg IVPB over 10 min, + IV drip at 0.15 mg/kg /hr |

FEMORAL NERVE BLOCK

<https://www.acep.org/MobileArticle.aspx?id=82892&parentid=740>