Treatment of Common Analgesic Side Effects

Constitution
1. Assure adequate water intake/hydration
2. Correct electrolyte abnormalities
3. Stool Softener: docusate Na (Colace®) 100 mg, or docusate Ca (Surfak®) 240 mg, po daily-bid
4. Cathartic: bisacodyl (Ducolax®) 10 mg po/pr qhs, or senna 2 tabs po qhs-bid
5. Osmotic agent: Lactulose 30-60 ml, or sorbitol 30 ml, po daily-bid prn
6. Enema: oil retention (mineral oil) 120 ml, or sodium biphosphate (Fleet’s®), pr daily prn
7. Peripheral opioid antagonist: methylnaltrexone (Relistor®)* 12 mg (0.6 ml) subq daily prn, or naloxone (Narcan®) 0.4 mg in 8oz H2O daily prn

Nausea
1. Correct constipation
2. 5HT3 antagonists: ondansetron (Zofran®) 8 mg po/iv q12h prn n/v
3. Dopamine antagonism: prochlorperazine (Compazine®) 10 mg po/pr q6h prn n/v
4. Antihistamine: promethazine (Phenergan®) po/im or hydroxyzine (Atarax®) iv/po, 25 mg q8h prn n/v
5. Prokinesis: Metoclopramide (Reglan®) 10 mg po tid prn n/v
6. Anticholinergic: scopolamine (Transderm Scop®)* 0.5 mg q3d

Pruritis
1. Diphenhydramine (Benadryl®) or hydroxyzine (Atarax®) 25-50 mg iv/po, q4h prn
2. Nalbuphine (Nubain®)*5-10 mg q3-4h im/iv prn

Respiratory Depression
1. Naloxone (Narcan®) 0.2-1 mg iv q2-3 min prn

*Non-formulary or restricted on Shands formulary

Sample PCA Orders - Adult
1. Med and [conc]: morphine [1mg/ml]
2. Loading dose: morphine 2-4 mg every 5 min until patient is comfortable or max 12 mg
3. Demand dose: morphine 1.5 mg
4. Lock out interval: 8 minutes
5. Basal Rate: 1mg/h for first post-op night only, or patients on chronic opioid therapy.
6. 4 Hr-Limit: 30mg
7. Monitor pain on NRS every 4 h. If pain consistently rate >4/10, increase demand dose by 0.2 mg q4h x3 prn. If pain still is not controlled, consult team.
8. Monitor RR every 2 h for 8 hours, then every 4 h.
9. For RR < 10/min: stop PCA and call team
10. For RR < 8/min: stimulate patient, start O2 @ 6L/min
11. For pruritis: Benadryl 25-50 mg IV/IM every 4 to 6 h prn. If ineffective, Nubain 2.5-5 mg iv every 4 h prn
12. For Nausea: ondansetron 8 mg po/iv q12h, or Metoclopramide 10 mg IV every 4-6 h, prn nausea.
13. Do not administer any other opioid analgesics unless specifically approved by physician.

PAIN MANAGEMENT GUIDELINES®

Principles of Pain Management
- Pain control improves outcome
- Control to acceptable level is goal
- Pre-emptive control is optimal
- Pain must be reassessed at regular intervals
- Certain patients require individual attention.
- Involve family members when appropriate.
- Consider available treatment options
  - Cognitive-behavioral methods
  - Systemic pharmacotherapy
  - Interventional techniques
  - Physical modalities
  - Neuromodulation
  - Surgery
- Systemic pharmacotherapy is basis of acute & cancer pain management
- Unexpected pain requires reevaluation
- Revise management plan as necessary

Pharmacotherapeutic Principles
- Treat mild-moderate somatic-nociceptive* pain with acetaminophen or NSAID unless specific contraindication
- Add opioid for moderate-severe pain
- Add adjuvant to treat side effects or increase analgesia
- A-T-C or ER dosing for continuous pain
- Short acting opioid for breakthrough pain
- Begin treatment of mild-mod neuropathic* pain with TCA or SNRI and an antiepileptic
- Add opioid for mod-severe neuropathic pain

*Somatic-nociceptive pain: Associated with tissue damage. Aching, sharp. (e.g., post-op, traumatic)
*Neuropathic pain: Altered nerve transmission. Burning, tingling, numbing (e.g., neuropathies)

Pain assessment: Numerical Rating Scale(NRS)0-10
- 0 (no pain) - - - - - - - - - -10 (worse possible pain)

Disclaimer: Though the medications and dosages are within ranges found in scientific literature, these guidelines are those of the author, should be independently confirmed by prescriber, and are not official recommendations of Shands or the University of Florida.

For more pain management guidelines, consults: http://intrashands1.umc.ufl.edu/dept/painmanagement/painmgmt.asp

Pain Management Guidelines®
Prepared by: Timothy L. Sternberg, DMD, MD
Center for Pain Management, UF/Shands Jacksonville May 2009
### Anti-Neuropathic Medications

<table>
<thead>
<tr>
<th>Medication</th>
<th>Trade name</th>
<th>Beginning</th>
<th>Max dose</th>
<th>Max dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCAs:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amitriptyline</td>
<td>Elavil®</td>
<td>25 mg qhs</td>
<td>200 mg/d</td>
<td>150 mg/d</td>
</tr>
<tr>
<td>Nortriptyline</td>
<td>Pamelor®</td>
<td>200 mg/d</td>
<td></td>
<td>200 mg/d</td>
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<tr>
<td>Desipramine</td>
<td>Norpramin®</td>
<td>150 mg/d</td>
<td></td>
<td></td>
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<tr>
<td>SRNIs:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venlafaxine</td>
<td>Effexor XR®</td>
<td>37.5 mg/d</td>
<td>60 mg/d</td>
<td>225 mg/d</td>
</tr>
<tr>
<td>Doluxetine*</td>
<td>Cymbalta®*</td>
<td>225 mg/d</td>
<td>120 mg/d</td>
<td></td>
</tr>
<tr>
<td>Gabapentin</td>
<td>Neurontin®</td>
<td>300 mg qhs</td>
<td>tid</td>
<td>3600 mg/d</td>
</tr>
<tr>
<td>Pregabalin</td>
<td>Lyrica®</td>
<td>50 mg tid</td>
<td>100 mg tid</td>
<td></td>
</tr>
<tr>
<td>Oxcarbazepine</td>
<td>Trileptal®*</td>
<td>300 mg bid</td>
<td>2400 mg/d</td>
<td></td>
</tr>
<tr>
<td>Capsaicin*</td>
<td>Zostrix®*</td>
<td>0.025 q4h</td>
<td>0.075% q4h</td>
<td></td>
</tr>
<tr>
<td>Lidocaine Patch*</td>
<td>Lidoderm®*</td>
<td>5% patch 1-3 q12h</td>
<td>3 patches q12h</td>
<td></td>
</tr>
</tbody>
</table>

### NSAID and Non-Opioid Analgesics

<table>
<thead>
<tr>
<th>Medication</th>
<th>Generic</th>
<th>Trade name</th>
<th>Adult</th>
<th>Pediatric</th>
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</thead>
<tbody>
<tr>
<td>Acetaminophen</td>
<td>APAP</td>
<td>Tylenol®</td>
<td>325-650 mg po q4h max: 1 g/d</td>
<td>10-15 mg/kg po q4h max: 75 mg/kg up to 2 g/d</td>
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<tr>
<td>Acetylsalicylic</td>
<td>Aspirin</td>
<td></td>
<td>325-650 mg po q4h max: 4 g/d</td>
<td>Not generally used. (Ibuprofen's syndrome)</td>
</tr>
<tr>
<td>acid, ASA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Celecoxib*</td>
<td>Celebrex*</td>
<td></td>
<td>100-200 mg po q12-24h max: 400 mg/d</td>
<td>N/A</td>
</tr>
<tr>
<td>Choline Magnesium</td>
<td>Trilisate®</td>
<td>500-1500 mg po q8-12h max: 3 g/d</td>
<td>25 mg/kg po q12h pm</td>
<td></td>
</tr>
<tr>
<td>Trisalicylate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ibuprofen</td>
<td>Motrin®</td>
<td></td>
<td>400 mg q6h 400 mg q6h max: 2400 mg/d</td>
<td>4-10 mg/kg po Q6-8h max: 40 mg/kg/d</td>
</tr>
<tr>
<td>Indomethacin</td>
<td>Indocin®</td>
<td></td>
<td>25-50 mg po Q6-12h max: 200 mg/d</td>
<td>2-4 mg/kg po Q6-12h max: 40 mg/kg/d</td>
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<tr>
<td>Naproxen</td>
<td>Naprosyn®</td>
<td></td>
<td>250-500 mg q12h max: 1500 mg/d</td>
<td>5 mg/kg po q12h pm max: 1000 mg/d</td>
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<tr>
<td>Piroxicam</td>
<td>Feldene®</td>
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<td>10-20 mg po q daily max: 20 mg/d</td>
<td>0.2-0.3 mg/kg po q8 pm max: 5 mg/d</td>
</tr>
<tr>
<td>Salsalate</td>
<td>Salisatab®</td>
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<td>500-1000 mg po q4-6h max: 3 g/d</td>
<td>N/A</td>
</tr>
<tr>
<td>Sulindac</td>
<td>Clinoril®</td>
<td></td>
<td>150-200 mg po q12h max: 400 mg/d</td>
<td>N/A</td>
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<tr>
<td>Ketorolac</td>
<td>Toradol®</td>
<td></td>
<td>50 mg iv q6h x8 max: 120 mg/d</td>
<td>0.5 mg/kg iv q6h max: 2 mg/kg/d</td>
</tr>
<tr>
<td>Tramadol</td>
<td>Ultram, Ultracet*</td>
<td></td>
<td>50-100 mg q6h pm pain max: 400 mg/d</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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