

## Commonly Used Non-Opioid Analgesics

| Drug  | Average Dose                          | Dosing Interval | Maximum Dose in 24h  | Side Effects   | Comments  |
|---|---------------------------------------|-----------------|--|--|---|
| Acetaminophen (Tylenol)   | 500-1000 mg                           | 4-6h            | 4 g (<3 g in patients with liver dysfunction and in the elderly) | Minimal, if any, side effects                                  | Toxic to the liver in overdose  |
| <b>Non Steroidal Anti-Inflammatory Drugs (NSAIDs) (use with extreme caution in the elderly)</b> |                                       |                 |  |  |   |
| Aspirin   | 500-1000 mg                           | 4-6h            | 4000 mg  | *see below   | Caution with hepatic/renal disease.   |
| Choline Magnesium Trisalicylate (Trilisate)   | 500-1000 mg                           | 8-12h           | 3000 mg  | Lower incidence of GI bleeding, minimal anti-platelet activity | Caution with hepatic/renal disease.   |
| Ibuprofen (Motrin & others)   | 200-400 mg                            | 4-6h            | 2400 mg  | *see below   | Caution with hepatic/renal disease.   |
| Naproxen (Naprosyn)   | 500 mg initial, 250 mg subsequent     | 6-8h            | 1500 mg  | *see below   | Caution with hepatic/renal disease.   |
| Nabumetone (Relafen)  | 500-750 mg                            | 8-12h           | 2000 mg  | *see below   | Caution with hepatic/renal disease.   |
| Ketorolac (Toradol)   | 30 mg IV initial, 15-30 mg subsequent | 6h              | 150 mg first day, 120 mg thereafter                              | *see below   | In elderly, 30 mg starting dose, 15 mg thereafter. Use restricted to 5 days max. Caution with hepatic/renal disease   |
| Celecoxib (Celebrex)  | 100-200 mg                            | 12h             | 200-400 mg   | Lower incidence of adverse GI effects                          | Contraindicated in sulfonamide allergy. No platelet effects. Risk of cardiovascular events. Use lowest dose possible. |
| Tramadol (Ultram)   | 25-50 mg                              | 4-6h            | 400 mg (300 mg in the elderly)                                   | Headache, confusion, sedation                                  | Atypical opioid with additional non-opioid effects. Available combined with non-opioids. Lowers seizure threshold.    |

\* Monitor for common adverse effects: GI ulceration and bleeding, decreased platelet aggregation, and renal toxicity.

## Management of Opioid Side Effects

| Adverse Effect         | Management Considerations   |
|------------------------|---|
| Constipation           | <b>Begin bowel regimen when opioid therapy is initiated.</b> Include a mild stimulant laxative (e.g., Senna, Cascara) + stool softener (e.g., Colace) at hs, or in divided doses as routine prophylaxis |
| Sedation               | Tolerance typically develops. Hold sedatives/anxiolytics, dose reduction; consider CNS stimulants (e.g., increase caffeine intake, methylphenidate or dextroamphetamine)                                |
| Nausea/Vomiting        | Dose reduction, opioid rotation; consider metoclopramide, prochlorperazine, scopolamine patch   |
| Pruritus               | Dose reduction, opioid rotation; consider an antihistamine such as diphenhydramine  |
| Hallucinations         | Dose reduction, opioid rotation, consider neuroleptics (haloperidol or risperidone)   |
| Confusion/Delirium     | Dose reduction, opioid rotation, neuroleptic therapy (haloperidol, risperidone)   |
| Myoclonic Jerking      | Dose reduction, opioid rotation; consider clonazepam, baclofen  |
| Respiratory Depression | <b>Sedation precedes respiratory depression.</b> Hold opioid. Give low dose naloxone - dilute 0.4 mg (1ml of a 0.4 mg/ml amp of naloxone) in 9 ml normal saline for final concentration of 0.04 mg/ml   |

### References

- 1) American Geriatric Society Clinical Practice Guidelines (2002). *The management of persistent pain in older persons*. AGS.
- 2) American Pain Society (2002). *Guideline for the management of pain in osteoarthritis, rheumatoid arthritis, and juvenile chronic arthritis*, 2nd ed., Glenview, ILL: APS.
- 3) American Pain Society (2003). *Principles of Analgesic Use in the Treatment of Acute Pain and Cancer Pain*, 5th edition.
- 4) American Pain Society (2005). *Guideline for the Management of Cancer Pain in Adults and Children*.

# Pain Management Pocket Tool



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## Principles of Pain Management

1. Ask the patient about the presence of pain
2. Accept the patient's report of pain
3. Perform a comprehensive pain assessment, including:
  - Onset, duration, and location
  - Intensity (use appropriate scale)
  - Effect on function and quality of life
  - What makes the pain better or worse
  - Patient's goal
  - Response to prior treatment
  - History/physical exam
4. **Avoid intramuscular route, the oral route is preferred**
5. Treat persistent pain with scheduled medications
6. Ordinarily two drugs of the same class (e.g., NSAIDs) should not be given concurrently; however, one long-acting and one short-acting opioid may be prescribed concomitantly
7. Assess, anticipate and manage opioid side effects aggressively
8. Most opioid agonists have no ceiling dose for analgesia; titrate to relief and assess for side effects
9. With older adults, start low, go slow, but go!
10. Discuss goals and plans with patient and family
11. Assess and reassess pain frequently
12. **Avoid meperidine and propoxyphene**
13. Addiction occurs rarely unless there is a history of substance abuse; the hallmarks include:
  - a) compulsive use, b) loss of control, c) use despite harm

## Management of Breakthrough Pain

When using long-acting opioids around-the-clock for persistent pain, obtain order for a short-acting opioid (rescue) for breakthrough pain.

- The rescue dose is 10-15% of the 24h total daily dose.
- Oral rescue doses should be available every 1-2h; parenteral doses every 15-30 minutes.
- If patient is consistently using 3 or more rescue doses daily, consider increasing the around-the-clock dose.
- Whenever the around-the-clock dose is increased, the rescue dose will need to be recalculated.
- Consider using the same drug for both scheduled and breakthrough doses when possible (e.g., long-acting morphine + short-acting morphine).

### Examples:

**Oral rescue dosing:** Pt. is on MS Contin 200 mg q 12h.

1. Total daily dose (200 mg x 2 = 400 mg morphine/24h)
2. Calculate 10 to 15% of 24h dose for rescue dose.  
(10% = 40 mg, 15% = 60 mg short-acting morphine)
3. Rescue dose = 40-60 mg of morphine q 1-2h.

**Parenteral Dosing:** (based on continuous infusion)

Calculate rescue dose based on 25-50% of hourly dose.

## Adjuvant Analgesic Drugs

Most commonly used drugs. Consideration should be given to comorbidities, hepatic and renal insufficiency, and age.

| Drug  | Uses                                     | Starting Dose                                     | Dose Range                               | Comments  |
|---|--|---|--|---|
| <b>Antidepressants (often use lower doses to treat pain than to treat depression)</b>   |  |   |  |   |
| <b>Tricyclic Antidepressants</b>  |  |   |  |   |
| Amitriptyline (Elavil)  | Neuropathic pain                         | 25 mg po hs (10 mg or less for elderly)           | 75-150 mg po hs                          | For all:<br>Side effects include dry mouth, drowsiness, dizziness, constipation, urinary retention, confusion. Titrate dose every few days to minimize side effects. Avoid in the elderly. Caution in patients with cardiovascular disease. |
| Nortriptyline (Pamelor)   | Neuropathic pain                         | Same as above                                     | 75-150 mg po hs                          | Lower side effect profile than amitriptyline. Titrate as above.   |
| Desipramine (Norpramin)   | Neuropathic pain                         | Same as above                                     | 75-150 mg po hs                          | Lower side effect profile than amitriptyline. Titrate as above.   |
| <b>Selective Serotonin and Norepinephrine Reuptake Inhibitor (SSNRI) Antidepressant</b> |  |   |  |   |
| Duloxetine (Cymbalta)   | Diabetic peripheral neuropathy           | 30 mg   | 60mg once daily sustained release        | Should not use with MAOIs. Consider lower starting dose for patients for whom tolerability is a concern.  |
| <b>Anticonvulsants</b>  |  |   |  |   |
| Gabapentin (Neurontin)  | Neuropathic pain                         | 100-300 mg po tid increase by 100 mg tid q 3 days | 300-3600 mg /day in three divided doses. | Adjust dose for renal dysfunction. Usually first choice anticonvulsant. Can cause drowsiness. No drug-drug interactions.  |
| Carbamazepine (Tegretol)  | Neuropathic pain                         | 100 mg po bid                                     | 400-800 mg/day; max 1600 mg/day          | Monitor serum levels; multiple drug-drug interactions.  |
| Lamotrigine (Lamictal)  | Neuropathic pain                         | 25-50 mg/day                                      | 200-600 mg/day                           | Serious skin rashes have been reported.   |
| <b>Corticosteroids</b>  |  |   |  |   |
| Dexamethasone (Decadron)  | Spinal cord compression, bony metastases | 4-8 mg po q 8-12h<br>10-20 mg IV q 6h             | Minimal effective dose                   | High dose therapy should not exceed 72h. May improve appetite.  |
| Prednisone  | Spinal cord compression, bony metastases | 5-10 mg po daily or bid                           | Minimal effective dose                   | For cancer pain, continue treatment until side effects outweigh benefit.  |
| <b>Local Anesthetic</b>   |  |   |  |   |
| Lidoderm Patch (Topical Lidocaine)  | Post Herpetic Neuralgia                  | 1-3 patches over painful area(s)                  | 1-3 patches 12h on and 12h off           | Patch may be cut to fit painful area(s). Place only on intact skin.   |
| <b>Other Adjuvant</b>   |  |   |  |   |
| Baclofen (Lioresal)   | Muscle spasticity                        | 5-10 mg po tid-qid                                | 80-120 mg po in 24h                      | Caution in renal insufficiency.   |

**Disclaimer:** The intent of this guide is to provide a brief summary of commonly used analgesics. It is not a complete pharmacological review. All medications should be administered only with physician or licensed allied health provider orders. No liability will be assumed for the use of this tool.

## Switching From One Opioid To Another: (Examples)

- Calculate the total 24h dose of pt's opioid regimen.  
(morphine 30 mg q 4h = 180 mg/24h)
- Locate new opioid on equianalgesic chart.  
(hydromorphone 7.5 mg = 30 mg morphine)
- Set-up equation.  
$$\frac{180 \text{ mg}}{30 \text{ mg}} = \frac{X}{7.5 \text{ mg}}$$
 and cross multiply  
(X = 45 mg hydromorphone in 24h)
- Divide the total daily dose of the new opioid by the number of doses given per day.  
(45 mg divided by 6 doses = 7.5 mg q 4h)
- Reduce calculated dose of new opioid by 25% -50% for incomplete cross tolerance; titrate up as needed.

Transdermal Fentanyl (Duragesic patch)

**Use caution in opioid-naïve patient.**

Duragesic patch 25 lg q 72h = 50 mg oral morphine q 24h.  
Divided into 6 doses = 8.3 mg oral morphine or 2.8 mg IV morphine q 4h. **These are approximate doses.**

## \*Opioid Equianalgesic Chart

| Opioid   | Parenteral Route | Oral Route | Starting Dose for Opioid Naïve  |
|--|------------------|------------|---|
| <b>(opioids with no ceiling dose)</b>  |                  |            |   |
| Morphine   | 10 mg            | 30 mg      | 15 mg for both sustained release and immediate release  |
| Hydromorphone  | 1.5 mg           | 7.5 mg     | 4 mg  |
| Oxycodone  | N/A              | 20 mg      | 10 mg sustained release, 5 mg immediate release   |
| Fentanyl   | 0.1 mg (100 µg)  | N/A        | 25 µg patch is equal to approx. 50 mg of oral morphine q 24h  |
| Methadone  | 5 mg             | 10 mg      | 3-5 mg po for long term use (can accumulate due to long half life) Consult pain specialist before prescribing   |
| <b>*Combination Opioid Drugs (have ceiling dose)</b>                             |                  |            |   |
| Hydrocodone + aspirin, acetaminophen, or ibuprofen (Vicodin, Lortab, Vicoprofen) | N/A              | 30 mg      | 5, 7.5, or 10 mg hydrocodone with acetaminophen, aspirin or ibuprofen (4 g/24h ceiling dose with acetaminophen) |
| Oxycodone (Percocet, Tylox)  | N/A              | 20 mg      | 5 mg oxycodone with 325 or 500 mg acetaminophen (4 g/24h ceiling dose with acetaminophen)                       |

*\*Equianalgesic doses are approximate. Individual patient response must be observed. Doses and intervals are titrated according to patient's response.*