Part II: Pharmacological Therapies

- Nonopioids
- Opioids
- Adjuvants

AGS, 2009; APS, 2008; Pasero & McCaffery, 2011; Paice, 2010
Nonopioids

- Acetaminophen
- NSAIDs

AGS, 2009; APS, 2008; Pasero & McCaffery, 2011; Paice, 2010
Acetaminophen (APAP)

- For mild to moderate pain
- Best for nociceptive pain
- First line therapy particularly in the frail elderly
- Mode of action not well understood
- Routine dosing up to 2000 mg/day in older adults

AGS, 2009
Acetaminophen (APAP)

- Scheduled dosing works best for older adults with persistent/daily pain
- Avoid or reduce dose in hepatic compromise or renal disease
- Be aware of “hidden” doses of APAP in combination products
**NSAIDs**

- Inflammation

- Effective for mild to moderate pain

- Caution in renal, hepatic, gastric, cardiovascular problems

- Risk of adverse events (GI bleeding) increases with age

AGS, 2009; Paice, 2010
Selective and Nonselective NSAIDs

- Examples of nonselective: ibuprofen (eg, Advil®), naproxen (eg, Naprosyn®, Aleve®)

- Examples of selective COX-2 inhibitors: Celebrex®
Nonopioids: Role of COX-2

- Controversy regarding long term use
- Increase in cardiovascular events
- Consider costs/benefits

AGS, 2009
Nonopioids: NSAIDs Adverse Effects
Opioids

- Effective for pain regardless of pathophysiology
- Safe for older adults when carefully initiated & titrated
- Can be delivered by all routes

AGS, 2009; Paice, 2010
DO NOT use the term narcotic, the preferred term is opioid.
Addiction

- Primary, chronic, neurobiologic disease, with genetic, psychosocial, and environmental factors influencing its development and manifestations.

- Characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving.

AAPM, APS, & ASAM, 2004; AGS, 2009; APS, 2008; AMADA, 2009
Definitions

• Tolerance

• Physiologic dependence

• Psychological dependence

• Double effect

AAPM, APS & ASAM, 2004
Side Effects

- Sedation
- Nausea and vomiting
- Constipation
- Urinary retention
- Confusion
- Dysphoria, hallucinations
- Myoclonus (rare, on low doses)
- Respiratory depression (rare)
Constipation

- Does not go away
- Nearly universal side effect of opioids and other analgesics
- Must be aggressively treated prophylactically
- ALWAYS consider stool softeners and laxatives
Nebulized and Sublingual Opioids

- Nebulized opioids provide no advantage over other routes of administration for dyspnea or pain.

- Sublingual morphine – only 18% absorbed through sublingual mucosa:
  - Fentanyl 51%
  - Buprenorphine 55%
  - Methadone 34%
  - Oxycodone 16%

Dudgeon, 2010; Gordon & Weissman, 2005
WHO 3 Step Analgesic Ladder

Pain Management

- Step 1: Mild pain
- Step 2: Moderate pain
- Step 3: Severe pain
Equianalgesic Dosing

- Methods for switching from one opioid to another or administration routes
- Use of equianalgesic tables is necessary but use the data cautiously
- Keep in mind the issue of “incomplete cross-tolerance”
- Reduce by 30-50% when changing drugs
Long Acting Medications

- Sustained release medications
- Immediate release for breakthrough pain
- Distinguish types of breakthrough pain
Opioid Rotation

- Use when one opioid is ineffective even with adequate titration

- Use when adverse effects are unmanageable
Co-analgesics/Adjuvants

- Medications developed and marketed for another medical condition (e.g., depression) but found also to be effective for pain

- Many co-analgesics target neuropathic pain
Adjuvant Analgesics

- Anticonvulsants
- Antidepressants
- Local anesthetics
- Corticosteroids
Anticonvulsants

- Act by reducing conduction of pain signals along damaged nerves

- Gabapentin (Neurontin®) is commonly used for burning, shooting pains

- Other anticonvulsants used for neuropathic pain: Levetiracetam (Keppra®), Tiagibine (Gabatril®), Lamotrigine (Lamictal®), and Pregabalin (Lyrica®)
Anticonvulsants (cont.)

- All these agents can cause unclear thinking, forgetfulness, and other CNS side effects.

- Slow initiation and taper up is essential – for example, start Neurontin® at 100 mg q hs and move up by 100 mg per day in divided doses once a week.
Tricyclic Antidepressants (TCAs)

- Indicated in neuropathic pain
- Believed to work by blocking chemical neurotransmitters for pain in the spinal cord and the brain
- Significant anticholinergic effects
- Causes morning grogginess at higher doses
- Significant postural hypotension in elderly
- Patient education is important!
Desipramine and nortriptyline are preferred over amitriptyline or doxepin in the older adult because they have less severe anticholinergic effects.

TCAs have significant interactions with other drugs that can cause blood levels to be much higher – to check ask the pharmacist to review the resident’s med list.
Newer Antidepressants

- Greater potency, fewer side effects
- Not much data in older adults
- Expensive
- Particularly effective for residents with pain and depression
- Examples: duloxetine (Cymbalta®) - FDA approved for neuropathic pain; venlafaxine (Effexor®)
Other Adjuvants/Coanalgesics

- May be effective in special cases
- Use cautiously in older adults
- Corticosteroids, e.g., prednisone, dexamethasone (Decadron®)
- Muscle relaxants, e.g., baclofen (Lioresal®)
Analgesic Side Effects

- More common in older persons
- Anticipate, prevent & treat
- More common with hepatic or renal insufficiency
- Commonly occurs:
  - With initiation of a new analgesic
  - Following an increase in analgesic dose
  - When non-analgesic is introduced that interacts with existing analgesic
Local Anesthetics

- Minimal systemic side effects
- Indicated for neuropathic pain but can be effective in musculoskeletal pain as well
- Lidocaine gel, EMLA® & Lidoderm® & Capsaicine®
Topical Agents: Lidocaine

- Lidocaine 5% patch, ointment
- FDA-approved for post-herpetic neuralgia
- Clinical trials show effectiveness in other neuropathic pain syndromes
- Effective adjuvant for osteoarthritis and back pain
- Local side effects: redness, edema, abnormal sensations at site
Topical Agents: Capsaicin

- Active ingredient of hot chili peppers
- Clinical trials show effectiveness for diabetic neuropathy, osteoarthritis, and rheumatoid arthritis
- Common adverse effects: burning pain at application site, sneezing and coughing
- Dosed q 6h, usually takes 2-4 weeks to achieve therapeutic effect
Interventional Therapies

- Intra-articular steroid injections
- Epidural steroid injections
- Neurolytic blocks
- Neuroablative procedures

Wong et al., 2004
Cancer Therapies to Relieve Pain

- Radiation
- Surgery
- Chemotherapy
- Hormonal therapy
- Others

Chevlen, 2007; Fairchild & Chow, 2009; Podnos et al., 2007; Rutter & Weissman, 2004
Other Issues

- Polypharmacy
- Cost
- Compounding
Non-Pharmacologic Techniques

Cognitive - behavioral therapies

- Relaxation
- Imagery
- Distraction
- Support groups
- Pastoral counseling
Non-Pharmacologic Techniques (cont.)

- Physical measures (heat, cold, massage)
- Complementary therapies

Bruckenthal, 2010; Ernst, 2004; Kravits & Berenson, 2010
Summary

- Pain relief is contingent on adequate assessment and use of both drug and non-drug therapies
- Pain extends beyond physical causes to other causes of suffering and existential distress
- Interdisciplinary care