

CHAMP: Bedside Teaching

TREATING PAIN

Stacie Levine MD

Teaching Trigger:

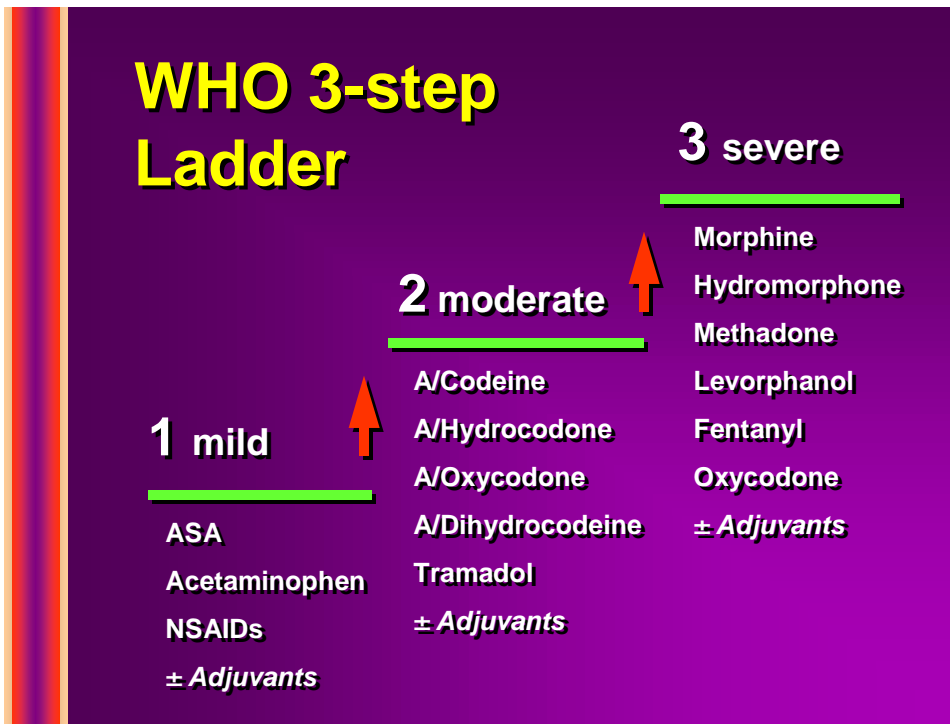
An older adult patient is identified as having pain.

Clinical Question:

What is the approach to treating pain in the aging adult patient?

Teaching Points:

- 1) WHO developed and validated in cancer population. When used appropriately can control over 90% of pain. Now supported by American Geriatric Society for use in treating pain in non-cancer population
- 2) Draw the WHO 3-step ladder and have housestaff fill in common medications used for mild, moderate, and severe pain (see below)
- 3) Discuss the types of pain (e.g., neuropathic vs. nociceptive) and how treatment may vary
 - (a) Neuropathic – “burning, tingling” – TCAs (desipramine, nortriptyline less side effects than amitriptyline), gabapentin
 - (b) Neuropathic – “shooting, stabbing” – gabapentin, valproic acid, carbamazepine
 - (c) Nociceptive – “dull, achy, crampy, colicky” – NSAIDS, acetaminophen, opiates
- 4) Opiates work on most types of pain
- 5) It is NOT necessary to precede from level 1 to 3 in sequential order (e.g., go right to level 3 if severe pain)
- 6) Use adjuvants when possible through all steps (e.g., adding Tylenol when on level 3 may reduce the amount of opiate needed)
- 7) Discuss non-systemic and non-pharmacologic therapies alone or as adjuvants
 - (a) Topical preparations (menthol, capsaicin)
 - (b) Repositioning, heat/cold, heal protectors
- 8) Discuss the unique properties found in individual medications (e.g., how we use the Fentanyl transdermal patch) [see below]



Unique Properties of Meds

- a) Level 1 (mild: corresponds to 1-3 on a 10 point scale)
 - i.) discuss non-pharmacologic strategies that can be done in the hospital (e.g. repositioning, heating pads, ice packs)
 - ii.) Discuss potential non-systemic therapies that can be done in the hospital (joint injection, capsaicin, menthol, topical lidocaine)
 - iii.) Discuss pharmacologic therapies
 - Acetaminophen
 - is first line in older adults
 - half-life 2-4 hours, dosed every 4-6 hours
 - excreted 85% renally
 - in normal hepatic function can give up to 4 gm/day
 - most clinicians do not push this dose
 - one 500mg tablet acetaminophen = 1 mg po morphine
 - NSAIDS
 - fine for short-term if not contraindicated (significant renal impairment, bleeding issues)
 - Indomethacin NOT appropriate due to CNS side effects
 - Consider Trilisate or adding GI protection (Misoprotol, Cytotec)
 - Maximal dose around 2400 mg/day
 - Ketorolac (Toradol) not recommended more than a couple of doses (GI bleed)

COX-2

- Favored anti-inflammatory
- Any are fine but Refoxicob is only one without sulfa moiety

ADJUNCTIVES (see below)

- b) Level 2 (moderate: corresponds to 4-6 on a 10 point scale)
 - i.) discuss the various pharmacologic therapies
 - ii.) remind that the maximum dose of opiate is often limited due to the ceiling effect of the tylenol/NSAIDS in the combination pills

GENERIC NAME	TRADE NAMES	TEACHING POINTS
Codeine	Tylenol #3	Can be given alone or in various combinations. Must be converted to active form (morphine) by CYP2D6 enzyme which is not functioning in approximately 10% of the population. This enzyme can be inactivated by other drugs such as Tagamet and Prozac. Should not use more than 1.5mg/kg pure codeine in any patient because of dose-limiting side effects (nausea)
Hydrocodone	Vicodin, Vicoprofin	
Tramadol	Ultram, Ultracet	Centrally acting, binds to micro-opioid (mu) receptors and inhibits the reuptake of serotonin and norepinephrine. Because of affinity for mu receptor patients may experience the same side effects as from opiates. Can precipitate serotonin crisis if patients are on concomitant high dose SSRIs. At high doses can induce seizures.
Oxycodone	Percocet, Percodan	30% stronger than morphine but is considered a Level 2 drug when given in combination (low dose)

- c) Level 3 (severe: corresponds to 7-10 on a 10 point scale)
 - i.) discuss the various pharmacologic therapies and nuances to each medication

GENERIC NAME	TRADE NAMES	TEACHING POINTS
Morphine	Kadian, MS Contin, MSIR, Oramorph SR	Widest bioavailability, comes in varied formulations and has well-characterized pharmacologic properties
Hydromorphone	Dilaudid	Six times more soluble in aqueous solutions and 4 times more potent than morphine (allowing for smaller injections or parenteral infusions)
Oxycodone	Oxcontin, OxyIR, Percocet, Percodan, Tylox	Also metabolized using CYP2D6 enzyme which can be affected by other meds (see codeine)
Fentanyl	Actiq, Duragesic	Can be given by IV, buccally, or patch Patch: Takes 12-24 hrs to reach full analgesic effect Duration 24-72 h Lipophilic so might not be ideal in setting of cachexia
Meperidine	Demerol	Long-acting, toxic metabolite normeperidine which can build up and cause confusion/seizures. Only should be used for short-term (e.g. sedation for GI procedures)
Methadone		Complex, complicated dosing regimen, should not be first line Long and variable half-life (12-60 hours) Significant inter-individual variability Drug interactions (Coumadin-like) Mu, Kappa, and Delta agonist Inhibits reuptake of serotonin and norepinephrine NMDA antagonist so has

		special role in treating neuropathic pain Should only be used by someone with experience!
--	--	--

Not recommended:

- 1) Meperidine (anything more than one or two doses) – see above
- 2) Pentazocine (Talwin) – no more potent than codeine. Causes hallucination and agitation
- 3) ANY mixed agonist-antagonist
- 4) Propoxyphene (Darvon, Darvocet) – efficacy may be no different than Tylenol but has longer-acting metabolite which may have adverse CNS side effects