Chronic Non-Terminal Pain

Opioid Based Treatment

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Learning Objectives

- Describe the role of opioid analgesics in the management of chronic pain syndromes
- Provide safe and effective dosing of opioids for various chronic pain syndromes

Outline

- The basics
  - Assessment
  - Goals
- Opioid analgesics
  - Treatment
  - Monitoring
  - Conversions

Assessment of Pain

- Thorough patient history
  - CC, HPI, ROS, PMH
- Validated pain scales (visual analog scales)
- Physical exam
- Imaging and diagnostic studies

Goals of Chronic Pain Management

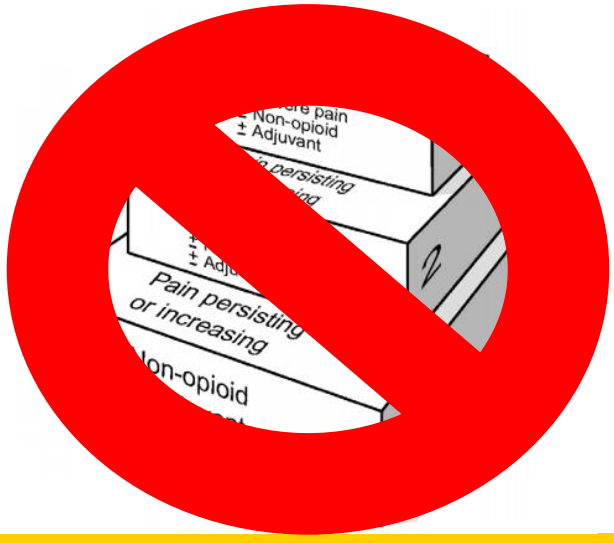
- Keep patient functional
- Improve mental health
- Decrease pain perception and dependence on drug therapy
- Decrease rate of physical deterioration
- Reduce pain as much as possible without undue adverse effects

Non-Pharmacologic Therapy

- Physical/Occupational therapy
- Transcutaneous electrical nerve stimulation
- Psychotherapy
- Cold/heat
- Massage
- Prayer/meditation/spiritual
- Distraction
- Exercise
- Music

Gordon. Healthcare. 2016;4 (2): 22.
Jauregui. Surg Tech Int. 2016; 28:296-302.

Pharmacologic Therapy



Pharmacologic Options

- Acetaminophen
- NSAIDs
- Muscle relaxants
- TCAs
- SSRIs, SNRIs
- Gabapentinoids
- Anticonvulsants
- Anti-arrhythmics
- Lidocaine
- Capsaicin
- Opioids
- Ketamine
- Corticosteroids
- Bisphosphonates

Last month, but do not forget to use them!

Next talk

Today's discussion

Advanced pain management

Opioids

- Opium – dried powdered alkaloid mixture from the unripe seed capsules of the poppy
- Opiates – naturally occurring alkaloids, referring to any agent derived from opium
- Opioid – broadly describes all compounds that work on opioid receptors

Definitions

- Agonist – produce maximal response from receptor
- Partial agonist – bind receptor but elicit only a partial functional response no matter the amount of drug administered
- Antagonist – produce no functional response and prevent agonist from binding

Receptors

- Three opioid receptors (μ, δ, κ)
  - All are G-protein coupled receptors
  - Distributed widely within the CNS and periphery

Mu Receptors

- Location: brainstem and medial thalamus
- Agonism: supraspinal analgesia, respiratory depression, euphoria, sedation, decreased gastrointestinal motility, physical dependence
- Subtypes:
  - Mu1 – analgesia, euphoria, serenity
  - Mu2 – respiratory depression, pruritus, prolactin release, dependence, anorexia, sedation

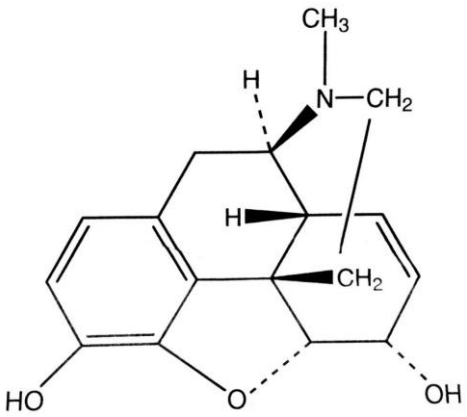
Kappa Receptors

- Location: limbic and diencephalic areas, brain stem, spinal cord
- Agonism: spinal analgesia, sedation, dyspnea, dependence, dysphoria, respiratory depression

Delta Receptors

- Location: brain
- Agonism: pscyhomimetic, dysphoria

Pharmacology

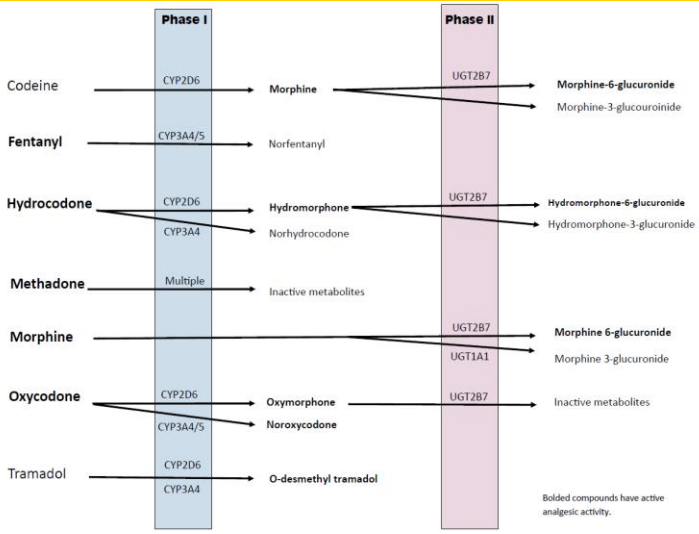


Indications and Role in Therapy

- Treatment of moderate to severe pain
- Cough, diarrhea, dyspnea, opioid dependence

- Acute, chronic, breakthrough, cancer, non-cancer, visceral, somatic, neuropathic (lesser extent) pain

Opioid Metabolism



Equianalgesic Opioid Dosing

Drug	Equianalgesic		Onset (min)	Duration (hr)	Notes
	IV	Oral			
Morphine	10	30	30	4	Not in renal patients
Hydromorphone	1.5	7.5	30	4	
Oxymorphone	1	10	30	4-6	Less histamine release than oxycodone
Codeine	100	200		4-6	Reduce dose in renal; consider genetics
Hydrocodone	-	30	30-60	4-6	
Oxycodone	-	20	30	4	
Fentanyl	0.1	-	5-10	1-2	2 mg OME = 1 mcg TDF
Tramadol	100	120	60	4-6	Caution in liver and renal patients; serotonin syndrome; hypoglycemia
Tapentadol			60	4-6	Caution in liver, do not use in renal

Onset and durations listed are for oral formulations except for fentanyl, which is for the transdermal formulation

CDC Guidelines

- No studies > 1 year of opioid vs. placebo, etc.
  - Most studies ≤ 6 weeks in duration
- Long-term opioid use is associated with an increased risk of opioid abuse or dependence
  - 0.7-6.1% vs. 0.004% rate of opioid abuse or dependence
  - Other studies report as high as 26%

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CDC Recommendations

- Non-pharmacologic therapy and non-opioid therapy are first line
  - Only use opioids if benefits outweigh risks and continue to use non-pharmacologic and non-opioid based therapies
- Establish treatment goals before opioid use
- Frequently re-evaluate and re-educate

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CDC Recommendations

- Use immediate release formulations
- Use the lowest dose necessary
  - Re-assess benefits if exceeding 50 OME
  - Avoid increases above 90 OME
- Long-term use often starts with treating an acute pain episode
  - Prescribe no more than is reasonably necessary for that condition

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CDC Recommendations

- Evaluate patients 1 to 4 weeks after starting opioids and at least every 3 months thereafter
- Consider mitigating strategies like narcotic contracts, naloxone co-prescriptions, prescription drug monitoring program checks, urine drug screens, avoid benzodiazepine co-prescriptions, and consider referral for opioid use disorders as needed

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Treatment

- Nociceptive pain
- Neuropathic pain
- Cancer pain

Monitoring

- Onset of analgesic effect
- Duration of analgesic effect
- PRN medication use
- ADEs of medications
- Concomitant medication use

Opioid Side Effect Management

Side Effect	Management
Nausea	Prochlorperazine
Pruritus	Diphenhydramine
Constipation	Senna or polyethyleneglycol
Urinary Retention	Foley
Respiratory Depression	Naloxone
Allodynia	Opioid rotation and IV fluids
Mental Status Changes	Full workup
Myoclonus	Lorazepam and IV fluids
Neurotoxicity	Opioid rotation and IV fluids
Allergy	Opioid rotation

Opioid Pearls

- Opioid absorption takes place in the gastric and duodenal mucosa
- Kadian or Avinza may be opened and sprinkled on soft food
- Kadian may be given via 16 French gastrostomy tube
- Controlled release morphine, controlled release oxycodone, and methadone may be given rectally

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