

Module 4: Pain Management

Pain Management Strategies
Webinar/Teleconference
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Project

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Objectives

- Describe the principles of pain management.
- Identify considerations in the use of opioids.
- Describe the benefits of adjuvant medications in pain management.
- Practice effective ways to communicate about pain to colleagues

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Pain pearls

- The barrier to effective pain management is that we don't apply what we already know in a timely manner
- Know the type and intensity of the pain you are treating
- Believe your patients report of pain

Definition of Pain

"An unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage."

AHCPR, 1994

Alternative Definition of Pain

"Pain is whatever the experiencing person it says it is, existing whenever he says it does."

Margo McCaffery

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General principles . . .

- Assessment
- Management
 - pharmacologic
 - nonpharmacologic

. . . General principles

- Education – patient, family, all caregivers
- Ongoing assessment of outcomes, regular review of plan of care
- Interdisciplinary care, consultative expertise

Pain pathophysiology

- Acute pain
 - identified event, resolves days–weeks
 - usually nociceptive
- Chronic pain
 - cause often not easily identified, multifactorial
 - indeterminate duration
 - nociceptive and / or neuropathic

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Nociceptive pain . . .

- Direct stimulation of intact nociceptors
- Transmission along normal nerves
- sharp, aching, throbbing (SAT)
 - somatic
 - easy to describe, localize
 - visceral
 - difficult to describe, localize

. . . Nociceptive pain

- Tissue injury apparent
- Management of chronic pain in palliative settings
 - opioids
 - adjuvant / coanalgesics
 - Important to treat 'Around the Clock' rather than prn, because unlike acute pain, chronic pain never ends

Neuropathic pain . . .

- Disordered peripheral or central nerves
- Compression, transection, infiltration, ischemia, metabolic injury
- Varied types
 - peripheral, deafferentation, complex regional syndromes

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... Neuropathic pain

- Pain may exceed observable injury
- Described as burning, electrical, numbness, tingling, shooting, stabbing (BENTSS)
- Management
 - opioids
 - adjuvant / coanalgesics often required

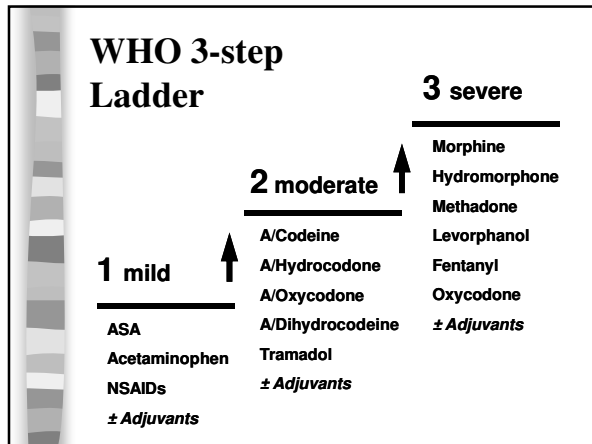
Pain management

- Don't delay using pain medication, including opioids, while trying to determine the cause of the pain
- Unmanaged pain → nervous system changes
 - permanent damage
 - amplify pain
- Treat underlying cause (eg, radiation for a neoplasm)

Placebos

- No role for placebos to assess or treat pain

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Acetaminophen

- Step 1 analgesic, coanalgesic
- Hepatic toxicity if > 4 g / 24 hours
 - increased risk
 - hepatic disease, heavy alcohol use
- Ceiling effect limits dosage

NSAIDs . . .

- Step 1 analgesic, coanalgesic
- Inhibit cyclo-oxygenase (COX)
 - vary in COX-2 selectivity
- All have analgesic ceiling effects
 - **effective for bone pain including bone metastasis**, inflammatory pain
 - individual variation, serial trials

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Opioids

- Step 2 or 3 Analgesic
- NO CEILING EFFECT
- Conjugated in liver
- Excreted via kidney (90%–95%)

Opioid pharmacology . . .

- C_{max} after
 - po ≈ 1 h
 - SC, IM ≈ 30 min
 - IV ≈ 6 min
- half-life at steady state
 - po / pr / SC / IM / IV ≈ 3-4 h

. . . Opioid pharmacology

- Steady state after 4–5 half-lives
 - steady state after 1 day (24 hours)
- Duration of effect of “immediate-release” formulations (except methadone)
 - 3–5 hours po / pr
 - shorter with parenteral bolus

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Routine oral dosing immediate-release preparations

- Codeine, hydrocodone, morphine, hydromorphone, oxycodone
 - dose q 4 h
 - adjust dose daily
 - mild / moderate pain ↑ 25%–50%
 - severe / uncontrolled pain ↑ 50%–100%
 - adjust more quickly for severe uncontrolled pain

Routine oral dosing extended-release preparations

- Improve compliance, adherence
- Dose q 8, 12, or 24 h (product specific)
 - don't crush or chew tablets
 - may flush time-release granules down feeding tubes
- Adjust dose q 2–4 days (once steady state reached)

Routine oral dosing long-half-life opioids

- Dose interval for methadone is variable (q 6 h or q 8 h usually adequate)
- Adjust methadone dose q 4–7 days

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Routine dosing

long-half-life opioids

- Fentanyl patch
 - Absorption through subcutaneous fat
 - C-max ~24 hours
- Dosing interval q48- 72 hours
Appropriate choice:
 - if oral administration isn't practical;
 - for STABLE pain management
- Need another opioid for breakthrough

Breakthrough dosing

- Use immediate-release opioids
 - 5%–15% of 24-h dose
 - offer after C_{max} reached
 - po / pr ≈ q 1 h
 - SC, IM ≈ q 30 min
 - IV ≈ q 10–15 min
- Do NOT use extended-release opioids

Clearance concerns

- Dehydration, renal failure, severe hepatic failure
 - ↔ ↓ dosing interval, ↓ dosage size
 - if oliguria or anuria
 - STOP routine dosing of morphine
 - use ONLY prn

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Not recommended . . .

■ Meperidine

- poor oral absorption
- normeperidine is a toxic metabolite
 - longer half-life (6 hours), no analgesia
 - psychotomimetic adverse effects, myoclonus, seizures
 - if dosing q 3 h for analgesia, normeperidine builds up
 - accumulates with renal failure

Not recommended . . .

■ Propoxyphene

- no better than placebo
 - low efficacy at commercially available doses
- toxic metabolite at high doses

. . . Not recommended

■ Mixed agonist-antagonists

- pentazocine, butorphanol, nalbuphine, dezocine
 - compete with agonists → withdrawal
 - analgesic ceiling effect
 - high risk of psychotomimetic adverse effects with pentazocine, butorphanol

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Nonpharmacologic pain management . . .

- Neurostimulation
- Anesthesiologic
- Surgical
- Physical therapy
- Psychological Approaches
- Complementary Therapies

Debunking common myths related to opioids

- Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months....True!
- Research shows that promethazine (Phenergan) and hydroxyzine (Vistaril) are reliable potentiators of opioid analgesics...False!

Debunking common myths related to opioids

- Vicodin (hydrocodone 5mg + acetaminophen 500mg) PO is approximately equal to 5-10 mg. of morphine PO... True!
- Benzodiazepines are not effective pain relievers unless the pain is due to muscle spasm...True!

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Opioid Adverse Effects

Common

- Constipation
- Nausea/Vomiting
- Sedation
- Dry Mouth
- Sweats

Uncommon

- Respiratory Depression
- Bad dreams / hallucinations
- Myoclonus / seizures
- Urinary retention
- Pruritus / urticaria
- Dysphoria / delirium

Constipation . . .

- Common to all opioids
- Opioid effects on CNS, spinal cord, myenteric plexus of gut
- Easier to prevent than treat
- TOLERANCE TO THIS SIDE EFFECT NEVER OCCURS

. . . Constipation

- Diet usually insufficient
- Bulk forming agents not recommended
- Stimulant laxative
 - senna, bisacodyl, glycerine, casanthranol, etc
- Combine with a stool softener
 - senna + docusate sodium

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Nausea / vomiting . . .

- Onset with start of opioids
 - tolerance develops within days
- Prevent or treat with dopamine-blocking antiemetics
 - prochlorperazine, 10 mg q 6 h
 - haloperidol, 1 mg q 6 h
 - metoclopramide, 10 mg q 6 h

. . . Nausea / vomiting

- Other antiemetics may also be effective
- Alternative opioid if refractory

Sedation . . .

- Onset with start of opioids
 - distinguish from exhaustion due to pain
 - tolerance develops within days
- Complex in advanced disease

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... Sedation

- If persistent, alternative opioid or route of administration
- Psychostimulants may be useful
 - methylphenidate, 5 mg q am and q noon, titrate

Respiratory depression ...

- Opioid effects differ for patients treated for pain
 - pain is a potent stimulus to breathe
 - loss of consciousness precedes respiratory depression
 - **pharmacologic tolerance rapid**

... Respiratory depression

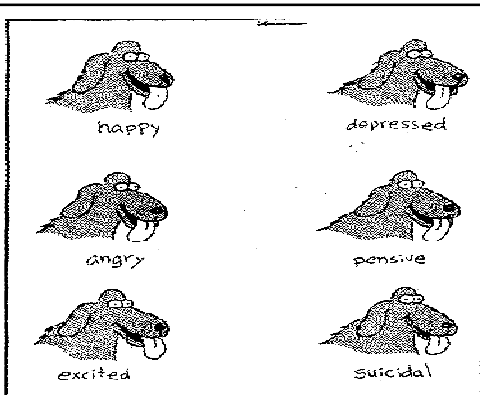
- Management
 - identify, treat contributing causes
 - reduce opioid dose
 - observe
 - if unstable vital signs
 - naloxone, 0.1-0.2 mg IV q 1-2 min

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Summary

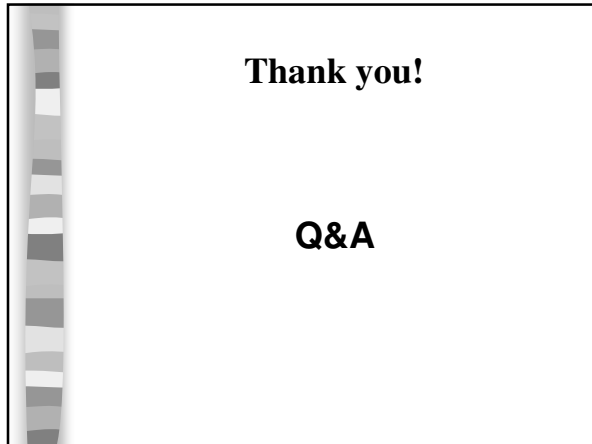
- The barrier to effective pain management is that we don't apply what we already know in a timely manner
- Assess the type and intensity of the pain
- Believe your patients report of pain
- Use the appropriate medication for the level and type of pain
- Aggressively treat adverse effects
- Consult palliative care expert resources if you're unsure what to do

Last Piece of Practical Information



How to recognize the moods of an Irish setter

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Thank you!

Q&A
