Opioid Use for Acute Pain & Risk Assessment

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Objectives

• Discuss safe & effective use of opioids for acute pain
• List common pain conditions where opioids are not indicated & recommend alternative therapies
• Identify screening for patients at risk for opioid abuse & misuse
• List education points for patients and providers on decreasing opioid over-use, diversion, and abuse

Guns, MVAs, or Opioids?

Which was responsible for the most deaths (US) in 2012?
Centers for Disease Control and Prevention 2015

Drug Deaths vs Motor Vehicle & Firearm Deaths 2004-2013

2014

- Centers for Disease Control & Prevention (CDC) Jan 2016

- Prescription opioids: 19,000 overdose deaths in United States

(Rudd R, CDC: personal communication)
Opioid Abuse & Adolescents

- ↑ prescription opioid abuse – Detroit area adolescents (Journal of Addiction Medicine 2012)
- 1 of 4 Detroit and suburban high school students abusing Rx opioids
- 80% obtained opioids from old prescriptions

Contributors Opioid Over-Use

- Pain "5th Vital Sign"
- "Big Pharma" influence
- "Patient satisfaction" metric
- Labeling of oxycodone for pediatrics
- Others?

Individual need vs Societal risk
Variability in Pain response: Genetic Basis?

- Pain - complex trait
- Role of genotype on pain perception and response
- ↑ anesthetic requirements during surgery:
  (red hair v. dark hair females) J Anesthesiology 2004

“Can’t believe it’s so easy to get narcotics!”

- 45 yo female presented - ED local hospital
- CC: Pain in lower back (9/10)
- HPI: Pain started after digging car out of snow bank
- PMH: negative
- Soc Hx: 2 to 4 mixed drinks twice weekly, denies drug abuse, nonsmoker
- Employed-full time social worker
- Allergies: NKDA
- Home Meds: Motrin 600 mg prn for occasional headache
- LMP: 2 weeks ago
- Diagnosis: acute lumbar sprain
- Discharge prescription: Hydrocodone 5 mg/acetaminophen 325 mg #60
  Take 1 to 2 tablets every 6 hours as needed for pain

Pharmacist’s Role - Pain Management

- Screening & monitoring-adherence
- Medication histories-avoid ADRs and DRPs
- Develop pharmacy care plan
- Education & counseling
- Transition of care
- Prevent ED visits - poorly controlled pain
- Appropriate referrals prn
Common Acute Pain Conditions

- Musculoskeletal pain (acute low back pain)
- Headache
- Non-traumatic tooth pain
- Post operative-procedural pain
- Sinus, Sore throat
- Trauma
- Acute exacerbation of chronic pain
- Opioid withdrawal presenting as acute pain

Acute Pain

- Resolves in time
- Periodically during life
- Injury, Illness, surgery
- < 3 months duration
- Responds to meds ± non-pharm therapy

Chronic Pain

- Continuous or intermittent
- May be intense as acute pain
- Beyond expected time for healing
- Long term condition
- Often causes depression
- Interferes with relationships

Overview of Pain Mechanisms

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Clinical Features</th>
<th>Cause</th>
<th>Mediation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somatic</td>
<td>Bone: localized, dull or aching, T: bony area, Soft tissue: localized, tender to touch</td>
<td>Surgical, trauma, dislocations, fractures, tumor, bone metastases</td>
<td>Acetaminophen, Corticosteroids, Local anesthetics (topical &amp; subQ), NSAIDs, Opioids</td>
</tr>
<tr>
<td>Visceral</td>
<td>Abdomen: Deep, squeezing/poor localized, abdomen, H/V bradycardia, hypotension t oxating</td>
<td>Bowel ischemia, obstruction, peritonitis, ovarian cysts, bladder distention, tumors</td>
<td>NSAIDs, Opioids, local anesthetics, intravenous corticosteroids</td>
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<td>Neuropathic</td>
<td>Burning; shooting; shock-like; Alloynic Pain on light touch; ↑ or ↓ pain sensations may occur at site</td>
<td>Fibromyalgia, Complex Regional Pain Syndrome (CRPS), migraine, trigeminal neuralgia, herniated discs, diabetes, HIV, post herpetic neuralgia, radiation from distant injury, chemotherapy</td>
<td>Antiepileptic drugs (AEDs); gabapentin, pregabaline; tricyclic antidepressants, serotonin-norepinephrine inhibitors, SNRIs (duloxetine, venlafaxine); opioids, tramadol, methadone, ketamine</td>
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## Pharmacologic Management

### Opioids:
1. morphine, hydromorphone
2. hydrocodone, oxycodone, codeine*
3. tramadol*, tapentadol
4. fentanyl, sufentanil, meperidine
5. methadone

*CYP2D6*1/1 (CYP2D6*1 genotype = ultrarapid metabolizer. Tramadol, like codeine, may pose a significant risk to patients (especially children) who are CYP2D6 ultrametabolizers

### Non-opioids:
- Local anesthetics
- α-2 agonists
- Ketamine
- NSAIDs
- Acetaminophen
- Skeletal muscle relaxants
- Antidepressants
- Antiepileptics (AEDs)
- Supplements/Herbals
Evidence for Pain Reduction

- Vitamin C
- Vitamin D
- Magnesium salts
- CoEnzyme Q-10
- Omega 3 fatty acids
- Tumeric
- Others?

Tumeric: Anti-inflammatory

- Component of curry
- Active ingredient: curcumin-(vallinoid)
- Inhibits TRPV1 & proinflammatory IL-6, TNF-a, iNOS
- Capsule or powder - Dose?
- Curcumin content: 0.3% - 5.4% of raw turmeric
- 180 mg/day – pain osteoarthritis knee
  (Higashiura et al J OrthopSci 2016)
- 500 to 1000 mg/day-diabetic neuropathy
  (Mengeide et al Antioxid 2016)

NSAIDS: Non Steroidal Anti-inflammatory Drugs

3 actions: 1. analgesic
2. anti-inflammatory
3. antipyretic

- Alone or combined - opioids or acetaminophen
- Effective for nociceptive & neuropathic pain
- First line for acute back pain
- Monitoring parameters & frequency?
- No clear guidelines for selection
- Monitor for duplicate NSAID use !!!!
NSAID Adverse Effects: Genetic basis?

- Gastric/renal SE - higher in adults
- Polymorphisms CYP2C9: ↑ risk NSAID- GI bleed
- CYP2C9*3 genotype variations
- Pts with Chronic Neck Pain (n=67) > 50 yo: 48% used NSAIDs yet 50% had “GI problems” Tutag Lehr V, Zidan M, Dunleavy K 2014
- Polymorphisms CYP2C19 predispose to PUD

Pain conditions where Opioids are never indicated

- Fibromyalgia
- Headache
- Sore throat (i.e. self limited illness)
- Uncomplicated musculoskeletal pain
- Uncomplicated back/neck pain
- Others?

Acute Low Back Pain

- Symptoms limited duration
- 90% significantly improve within 4-6 weeks
- Exclude serious pathology
  - Neurologic Deterioration
  - Infection
  - Tumor Progression
  - Anticoagulation

† May be rare exceptions
Discogenic Pain

- Age related biochemical changes – connective tissue
- Unavoidable! ↑ with aging
- Chemical changes begin soon after birth
- Structural changes lag - usually age 20 yrs

Acute Low Back Pain

**Conservative Treatment**
- Cold packs or heat
- Acetaminophen or NSAIDs
- Muscle relaxants
- Bed rest (severe – limit 48 hrs)
- Structured exercise
- Self care (hydration, smoking cessation, avoid caffeine)
- Re-evaluate 1 – 3 weeks

**Further evaluation if**
- History of injury
- History of back problems
- Back pain > 6 weeks
- Unexplained weight loss
- History of cancer
  - Comprehensive evaluation 2 – 7 weeks
Acute Low Back Pain

Urgent Evaluation
- Unrelenting night pain
- Pain at rest
- Fever > 48 hrs
- Below knee numbness and/or weakness of legs
- Loss bowel or bladder control
- Progressive neurologic/neuromotor deficit

• Lumbar spine radiographs*

• Appropriate consult:
  - Emergency medicine
  - Neurosurgery
  - Neurology
  - Oncology

* Also for pts with cancer, chronic steroid use, drug or ETOH abuse, or ankylosing spondylitis

Tooth Pain: Non Traumatic

- Long-acting local anesthetic (i.e., Marcaine)
- NSAIDs (ibuprofen)—very effective
  (Moore, 2013 [Meta-analysis]; Weil 2012, [High Quality alternate with Evidence])
- Topical anesthetic rinse - stomatitis, mucositis or oral ulcers:
  (Caution-Adult use only-Do not swallow!)
- Antibiotics - swelling or exudates
- Chlorhexidine rinse - localized gum inflammation/infection
- Appropriate X-rays/tests referral to dental provider asap

Acute exacerbation of chronic pain

- Identify source of pain (disease progression?)
- Contact patient’s Pain Management Specialist
- Review Pain Management Plan (ideal)
- Check Prescription Monitoring Program for opioid use
- Avoid adding medications - may complicate therapy/goals
- Avoid increasing or adding opioids
- Assess patient’s mental health status and social situation

ICSI Jan 2014
Opioid Withdrawal Presenting as Acute Pain

- Opioid tolerant ± opioid use disorder
- Lost or under-used opioids
- Symptoms: 12 to 24 hours (short acting), 48 hours (long acting)
- Abdominal pain-Anxiety
- Addiction Medicine Specialist consult
- Detox/treatment center
- Chronic pain patient-consult opioid prescriber

Factors Guiding Initial Opioid Selection

- Prior opioid history/experience
- Acute/intermittent versus chronic use
- Route of administration (oral preferred)
- Onset of action
- Co-morbid conditions
- Patient preference
- Cost
- Risk for abuse/diversion

Risks for Opioid Use

Alcohol:
- No known safe amount
- Risk highest - opioid naive patients
- Safest to abstain

Benzodiazepines (+ other drugs):
- Avoid combination
- ↑ risk – over-sedation, falls, respiratory depression, substance abuse
- Inform prescriber re: opioid
- Marijuana use prevalent
- Cocaine known factor for opioid abuse

CDC 2013
Opioid Risk Screening Tools

- ABCDPQRS:
  - SBIRT Model for Substance Use: (Screening, Brief Inventory, Referral to Treatment)

Opioid Risk Assessment (ICSI 2014)

- Alcohol use
- Benzodiazepine and other drug use
- Clearance and metabolism of the drug
- Delirium, dementia and falls risk
- Psychiatric comorbidities
- Query the prescription monitoring program
- Respiratory insufficiency & sleep apnea
- Safe driving, work storage & disposal

AUDIT-C Questions

AUDIT-C screening questionnaire

1. How often do you have a drink containing alcohol?
   - Never (0 points), Monthly or less (1 point), Two to four times a month (2 points)
   - Two to three times a week (3 points), Four or more times a week (4 points)

2. How many drinks containing alcohol do you have on a typical day when you are drinking?
   - 1 or 2 (0 points), 3 or 4 (1 point), 5 or 6 (2 points), 7 to 9 (3 points), 10 or more (4 points)

3. How often do you have six or more drinks on one occasion?
   - Never (0 points), Less than monthly (1 point), Monthly (2 points), Weekly (3 points), Daily or almost daily (4 points)

Scoring: Sum of 3 questions results in possible AUDIT-C scores of 0–12 points

Recommended screening thresholds: ≥4 points for men; ≥3 points for women
SBIRT Model for Substance Use

- Positive screen for misuse of drugs or alcohol
- Effective tool for identifying risk behaviors and providing appropriate intervention

How does SBIRT work?
- Incorporates screening for substance use - brief, tailored feedback and advice
- Can be performed in many settings - non-physician can screen
- Simple feedback on risky behavior - influence on patient behavior and change

Benefits of SBIRT?
- Prevent disease, accidents, injuries from substance use, improved patient outcomes
- Reduces healthcare utilization
- Reimbursable

Considerations - Analgesic Selection

- Type of pain syndrome
- Efficacy
- Potential side effects
- Comorbidities: (depression, sleep, obesity)
- Drug interactions
- Risk of suicide, overdose, abuse, diversion
- Cost: formulary/prior authorization

Considerations for Therapy

- Adherence
- Scheduling medication (school-work)
- Vitamin D status
- Smoking
- ETOH/marijuana/illicit drug use
- Self-medication
- Interaction screening
- Sexuality - contraception
- Insurance issues
Safer Prescription of Opioids: Acute Pain
ICSI January 2014

• Only 3 day supply (or 20 tablet max)
• Short acting, low dose, immediate release opioids
• Never use long acting/extended release
• Caution in elderly
• Primary care follow up 3 – 5 days
• Educate patient on risks & benefits (shared decision making)
• Review side effects, safe storage, disposal
• Maximize non-opioid therapies
**Health Provider Responsibility**

- Use prescription drug monitoring programs
- Discuss risks and benefits of opioids with patients
- Follow best practices:
  - Screen substance abuse and mental health conditions
  - Avoid opioids and sedatives combination
  - Prescribe lowest effective dose and only quantity needed for expected pain duration
- Effective treatments for substance abusers

**Patient Responsibility**

- Avoid taking opioids more often than prescribed
- Dispose of medications properly
- Avoid keeping prescriptions around “just in case”
- Do not sell or share prescription drugs
- Get help for substance abuse problems 1-800-662-HELP
- Call your pharmacist with questions about medication

**Psychology in Acute Pain Practice**

1. Vigilance to pain
2. Avoidance
3. Anger
4. Involve the patient
5. Make sense of the pain
6. Consistency
Shared Decision Making

• Health care professional and patient
• “Saying no” when appropriate
• Listening
• Empathy
• Offering alternatives
• Include patient in plan as much as possible

ICSI 2014

Selected References

(http://www.cdc.gov/vitalsigns/opioid-prescribing)


