Journal club

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An Overview of Pain Management: The Clinical Efficacy and Value of Treatment

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Where cited

- Cumulative Index to Nursing and Allied Health Literature (CINAHL)
- Current Contents/Clinical Medicine
- Current Contents/Social & Behavioral Sciences
- EMBASE/Excerpta Medica
- HealthSTAR
- Health Economic Evaluations Database (HEED)
- International Pharmaceutical Abstracts
- Physiotherapy Evidence Database (PEDro)
- PubMed/MEDLINE
- Science Citation Index Expanded
- Social SciSearch
- Social Sciences Citation Index

Method

- Primary
  - Case report
  - Case series
  - Cross sectional
  - Case control
  - Cohort
  - RCT
- Secondary
  - Systematic review
  - Narrative review

Appropriate treatment of pain

1. Characteristics of pain
   - Severity
   - Nature
2. Efficacies of the available agents

Agents

1. Acetaminophen
2. NSAID
3. Opioid
4. Muscle relaxant
5. Anti convulsant

Table 1. Common Medications for Management of Pain[1,6-14]

	Indications and Efficacy	Accessibility	Safety Concerns
Acetaminophen	• Has analgesic and antipyretic effects with no anti-inflammatory efficacy • Indicated for mild to moderate pain, such as that caused by headaches, cold, influenza, muscle aches, sprains, backache (including low back pain), dysmenorrhea, minor arthritis pain, and toothaches	OTC and prescription	• Serious liver damage if more than directed is used. The FDA advises patients not to exceed the acetaminophen maximum total daily dose of 4 g/day • Acute overdose and chronic excessive ingestion of acetaminophen are the leading cause of acute liver failure in the United States
Opioids	• Considered the most powerful or potent analgesics • Generally reserved for patients with moderate to severe pain that is unresponsive to non-opioid therapies	Prescription only	• A significant risk of misuse, abuse, overdose, and death • In 2009, >475,000 emergency department visits resulted from misuse and abuse of prescription opioid painkillers • Overall, deaths from prescription opioid use outnumber those resulting from heroin and cocaine combined
NSAIDs	• Have both analgesic and antipyretic effects, and anti-inflammatory efficacy • Indicated in mild to moderate pain	OTC and prescription	• Serious cardiovascular, gastrointestinal, and renal adverse events that are dose-dependent

FDA indicates US Food and Drug Administration; NSAID, nonsteroidal anti-inflammatory drug; OTC, over the counter.

NSAID (Postoperative pain)

- American society of Anesthesiology Task Force on Acute Pain Management 2012 :
  - Primary agent :
    - Acetaminophen
    - NSAID
    - Gabapentin
    - Pregabalin

NSAID (Postoperative pain) cont.

- Celecoxib
  - Cochrane review :
    - 50% pain relief
      - 33% 200 mg
      - 44% 400 mg
    - Adverse effect similar
- Single dose ibuprofen
  - Cochrane review
    - 50% pain relief , 50% moderate to sever postop
    - Adverse events were similar

NSAID (Postoperative pain) cont.

- Aspirin
  - Cochrane review :
    - 50% pain relief in 39% moderate to sever pain
    - Adverse events were similar (600-650 mg)

NSAID (Low Back Pain)

- ACP/APS
  - First line: NSAID or Acetaminophen
  - Sever pain: Opioid analgesics or Tramadol
  - Chronic: TCA
  - Short term acute LBP: Muscle relaxant

NSAID (Osteoarthritis, ACR)

- Hand
  - Topical capsaicin
  - NSAID
    - Oral
    - Topical (>75)
  - Acetaminophen
  - Tramadol

NSAID (Osteoarthritis, ACR) cont.

- Knee, Hip
  - Acetaminophen
  - Intra-articular corticosteroid
  - Opioid (not respond)
- ACR (2004), Cochrane (2006)
  - NSAID superior to acetaminophen

NSAID (Migraine, AAN, AHS)

- Prevention
  - Beta-Blocker
  - Triptan
  - Anti-convulsant
  - NSAID(Fenoprofen,Ibuprofen, Naproxen)
- Treatment
  - Cochrane review 2013: Ibuprofen
  - Meta-analysis 2010
    - Naproxen for acute pain
    - Significantly greater side effects

Acetaminophen

- Mild to moderate pain
- 4 g

Opioids

- Sever pain: Post operation setting
- Side effect
  - Respiratory depression
  - Motor and cognitive impairment
  - Sedation
  - Tolerance
  - Opioid induced hyperalgesia
  - Abuse
  - Addiction

Conclusion

- Acetaminophen : mild to moderate pain, 4g
- NSAID : majority of cases
  - GI & Renal & Cardiovascular
- Opioid : sever and non responsive pain

CDC Guideline

- When opioids are needed for acute pain, prescribe no more than needed
- Do not prescribe ER/LA opioids for acute pain
- Opioids are not first-line or routine therapy for chronic pain
- Use immediate-release opioids when starting
- Start low and go slow
- Discuss benefits and risks and availability of nonopioid therapies with patient

CDC Guideline cont.

- Follow-up and re-evaluate risk of harm; reduce dose or taper and discontinue if needed
- Use urine drug testing to identify prescribed substances and undisclosed use
- Avoid concurrent benzodiazepine and opioid prescribing
- Arrange treatment for opioid use disorder if needed

Thank you for attention