Acute pain

Pathophysiology/Description

- Pain is one of the most prominent healthcare issues today, with subjective and objective interpretations, current management controversies, and debilitating consequences.
- Pain was described by Margot McCaffery as "whatever the person experiencing the pain says it is, existing whenever the person says it does." Other definitions discuss unpleasant sensory and emotional experiences related to actual or potential tissue damage.
- Two types of pain (these may be acute or chronic):
  - Nociceptive pain:
    - May be superficial somatic (skin/mucous membranes), deep somatic (muscles/bones/tendons), or visceral (deep organs/GI tract/bladder).
    - Pain perception is impacted by physiologic, affective, cognitive, behavioral, and sociocultural dimensions.
    - Nociception processing of pain includes transmitting messages from site of tissue damage to central nervous system and is made up of 4 processes including transduction (release of chemicals in response to tissue damage), transmission (message transferred from periphery to spinal cord/dorsal root to thalamus and cortex), perception (personal interpretation of message), and modulation (descending messages that inhibit or facilitate effects of pain transmission).
    - Causes include trauma, surgery, injury, burns, disease, or necrosis.
    - Usually responsive to opioid and non-opioid drugs.
    - Nociceptive pain may be described as sharp, aching, dull, or cramping.
  - Neuropathic pain:
    - Including central pain (lesion in CNS), peripheral neuropathies (related to diabetes/alcoholism), deafferentation pain (loss of afferent transmission as in phantom pain), and sympathetically maintained pain (complex regional pain syndrome).
    - Causes include trauma, infection, metabolic disease, infection, alcoholism, tumors, toxins, or neurologic diseases.
    - Treatment usually requires adjuvant drugs.
    - Neuropathic pain may be described as burning, shooting, itching, or stabbing.

- Acute pain is defined as lasting less than three months, may be mild to severe levels, pain is generally associated with a specific event decreases over time and generally goes away. Acute pain may signal tissue damage and allow for adaptation. Unrelenting acute pain may become chronic in nature but goal of management of acute pain is relief of pain. Relief may not be total, but pain is reduced to a tolerable level.

Use standardized pain assessment tools.
- Assess risk factors for acute pain experiences including injury/trauma, surgery, pathophysiological changes in the body, necrosis of myocardial tissue, ischemia to peripheral extremities, acute degeneration of bone/muscle, vascular changes of cerebral vessels, labor/delivery, or infection.
- Assess client's personal interpretation of the meaning of pain.
- Assess self-report of pain (as client is able), including:
  - Onset (clients with acute pain may recall event or injury).
  - Pattern (may increase with activity or change based on medication dosing/duration of medication effects).
  - Duration.
  - Location/radiation (more often specific rather than generalized).
  - Intensity.
  - Quality (nature and characteristics).
  - Associated factors (pain may increase or decrease with activity, increases or decreases during sleep).
  - Previous and current management strategies/healthcare seeking/utilization/previous experiences.
  - Impact on social and occupational functioning.
  - Impact on sleep, activity, function, emotions, sexual libido/performance, and relationships with others.
- Assess objective signs of acute pain including how they hold their body/positioning, sitting very still or restless, pallor, elevated heart rate/respiratory rate/blood pressure, fatigue, anxiety, agitation, diaphoresis, confusion, facial expressions/gestures, moaning, or urinary retention.
- Assess for breakthrough pain, procedural/incident pain, or end-of-dose failure.

Priority Laboratory Tests/Diagnostics

- Diagnostic tests to detect underlying causes.

Priority Interventions

- Ensure accurate documentation of assessments and treatments.
- Treat underlying cause (antibiotics for infections, splint postoperative surgical site, cast fractured limb, manage cardiovascular function).
- Non-pharmacologic methods should accompany pharmacologic methods, including application of heat/cold, acupuncture, relaxation strategies, distraction, imagery, hypnotis, transcutaneous electrical nerve stimulation, massage, and use of complementary/alternative strategies.
- Frequently reassess pain levels and evaluate effectiveness of management strategies.
- Acute pain management may be facilitated by implantable pain pumps, client-controlled analgesia, and alternative administrations routes, including transmucosal, buccal, intranasal, and rectal routes.

Priority Assessments

- Screen all clients for pain (pain is the fifth vital sign).
Priority Potential & Actual Complications

> Untreated pain is associated with prolonged healing, immunosuppression, emotional/physical discomfort/dysfunction, depression, and sleep disorders

> Physiological complications may include weight loss, hypertension, hyperglycemia/glucose intolerance, atelectasis/pneumonia, paralytic ileus/constipation, immobility/deep vein thromboses, weakness/fatigue, infections, confusion/poor decision-making, fluid and electrolyte imbalance, social withdrawal, and isolation

Priority Nursing Implications

> Nurses may use standardized pain assessment tools, body maps to pinpoint pain location and radiation, and scales/analogues/FACES/ranking tools to assess pain intensity. These tools are valuable with clients with developmental/cognitive/communication barriers

> Self-report and description (rating) is critical, but often nurses must use other methods to assess pain for those who are unable to participate (clients who are non-verbal, unconscious, or who have communication disorders)

> Clients in acute pain often benefit from around-the-clock analgesia, rather than PRN scheduling. This prevents pain from getting to a level too high/difficult to manage

> Multimodal analgesia dictates that two or more agents are used together to manage pain, thereby increasing pain medication effectiveness, increasing client perceptions of pain management, and decreasing potential side effects of each medication (opioid-sparing effect of acetaminophen when delivered with hydrocodone)

> Nurses need to vigilantly assess for respiratory depression in clients receiving opioid agents and carefully monitor during first doses, when dose is increased, or when multiple agents are used to manage pain

Priority Medications

> acetaminophen
  - May be PO, PR, IV/sustained-release available in oral forms
  - For mild to moderate pain and is an antipyretic, no antiplatelet or anti-inflammatory effects
  - Long-term use or high doses may impair liver function, cause liver toxicity

> ibuprofen
  - PO
  - May cause GI side effects (bleeding, perforation, or ulceration, especially in older adults)
  - May increase hypertension, myocardial infarction, and stroke

> ketorolac
  - For < 5 days
  - Ensure hydration to avoid kidney dysfunction

> celecoxib
  - Inhibits COX-2, not COX-1, and creates less GI side effects (risk still exists)
  - May be associated with cardiovascular thrombosis, MIS, and CVAs (increased risk with long-term use or CV risk factors)

> codeine with acetaminophen
  - Associated with high incidence of nausea and constipation
  - Oral agent for moderate pain relief, acetaminophen has opioid-sparing effects
  - 5-10% of European Americans lack the enzymes needed to metabolize codeine to endogenous morphine

> hydrocodone with acetaminophen
  - Oral combination of opioid with co-analgesics
  - Used for moderate to severe pain
  - Short-term management of acute pain

> morphine
  - PO, PR, IV, subcutaneous, epidural, intrathecal, sublingual
  - For moderate to severe pain

> lidocaine
  - Topical local anesthetic
  - Used for painful procedures (venipuncture, lumbar puncture, bone marrow aspiration)
  - Takes about 30 minutes to achieve effect, lasts about 60 minutes

> naloxone
  - Reverses effects of opioids
  - IV, Subq, nasal spray
  - If opioids used for pain management for several days, client may experience severe pain and/or withdrawal symptoms when naloxone administered

Priority Education/Discharge Issues

> Teaching is incorporated into all components of assessment and management of pain

> Emphasis should be placed on education about the side effects of medications, including constipation, sedation, nausea, itchiness, and respiratory depression associated with opioids, dose or agent limiting side effects, adverse reactions, and scheduling. Side effects are major causes of poor pain control and non-adherence in cases of acute and chronic pain

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**Image 14-3:** Think of three clients. For whom would this pain scale not work? Conduct an internet search for 'cultural variation in pain assessment.'