Tikrit university

College of Nursing

Clinical Nursing Science

Fourth Stage/ 2025

Critical Care Nursing

(Pain and Pain Management)

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Pain and Pain Management

Learning Objectives: At the end of this lecture, the student should be able to:

1. Define concepts of pain, nociception, and critical care nursing.

2.Identify the components and types of pain.

3.Outline the pain management.

Definition

Pain is described as an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage.

Nociception: Noxious (or toxic) stimulus or stimulus that can become noxiouswith prolonged exposure, a Process through which peripheral pain receptors transmit information about current (or potential) tissue damage centrally as pain

Nociceptor: Receptor in end organ that detects biochemical changes associated with current or potential tissue damage

Components of Pain: The experience of pain includes:

1. Sensory: (perception of many characteristics)

A. Intensity. B. Location. C. Quality.

2. Affective. (negative emotions) A. Unpleasantness. B. Anxiety. C. Fear.

D. anticipation

Types of Pain according to duration:

1. **Acute Pain**: Usually corresponds to the healing process (30 days), but should not exceed 6 months. It implies tissue damage that is usually from an identifiable cause.

2. **Chronic Pain:**Persists for more than 6 months after the healing process from the original injury. It develops when the healing process is incomplete or, as described earlier when acute pain is poorly managed.

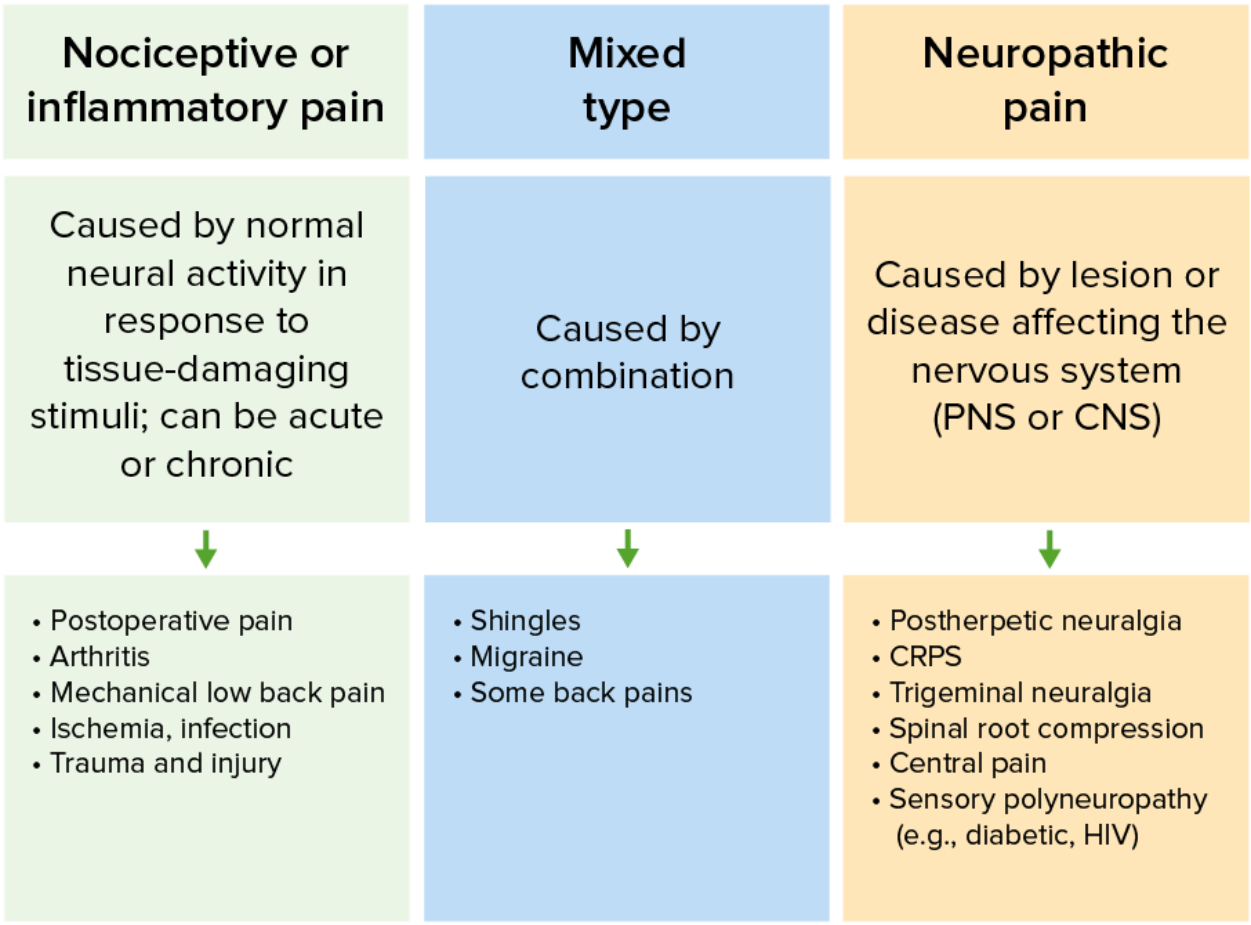
Type of Pain According to Origin :

1. Nociceptive Pain: Arises from activation of nociceptors, and is divided into:
A.Somatic pain involves superficial tissues, such as the skin, muscles, joints, and bones. Its location is well-defined.

B. Visceral pain involves organs such as the heart, stomach, and liver. Its location is diffuse, and it can be referred to as a different location in the body.

2.Neuropathic Pain: Arises from a lesion or disease affecting the somatosensory system: A.Periphral neuropathic pain: implies damage of the peripheral somatosensory system like Neuralgia and neuropathy

B. Central neuropathic pain involves the central somatosensory cortex and can be experienced by patients after a cerebral stroke.



Pain Assessment

Pain is a subjective experience, and self-report of pain is the most reliable indicator of a patient's experience. Determining pain is an important component of a physical

assessment, and pain is sometimes referred to as the “fifth vital

Pain assessment is an integral part of nursing care. It is a prerequisite for adequate pain control and relief. Pain assessment has two major components:

1. Nonobservable or subjective. 2. Observable or objective.

1.The Subjective(Nonobservable) Component:Refers to the patient’s self-report about his or her sensorial, affective, and cognitive experience of pain. Because it is considered the most valid measure of pain, the patient’s self-report must be obtained whenever possible. A simple yes or no (presence versus absence of pain) is a valid self-report.

The mnemonic **PQRSTU** in Pain Assessment :

P: provocative and palliative or aggravating factors

Q: Quality

R: region or location, radiation

S: severity and other symptoms

T: Timing

U: understanding

P: Provocative and Palliative or Aggravating Factors (eg .Deep breathing intensifying chest pain in the case of pericarditis)

Q: Quality pain as dull, aching, sharp, burning, or stabbing. This information provides the nurse with data regarding the type of pain the patient is experiencing (e.g., somatic or visceral). The differentiation between types of pain may contribute to the determination of cause and management.A patient who has had open-heart surgery may complain of chest pain that is shooting or burning. This information can lead the nurse to investigate for cutaneous or bone injuries as a result of a sternotomy. Another patient may describe a sharp thoracic pain that may lead the nurse to consider visceral pain as a result of pulmonary embolism. A verbal description of pain is important because it provides a baseline account, allowing the critical care nurse to monitor changes in the type of pain, which may indicate a change in the underlying pathology.

R: Region or Location, Radiation:usually is easy for the patient to identify, although visceral pain is more difficult for the patient to localize. If the patient has difficulty naming the location or is mechanically ventilated, ask the patient to point to the location on himself or herself or on a simple anatomic drawing.

S: Severity and Other Symptoms:the severity or intensity of pain, is a measurement that has undergone much investigation. Many pain intensity scales are available, including the descriptive and numeric pain rating scales that are often used in the critical care environment. Asking the patient to grade his or her pain on a scale of 0 to 10 is a consistent method and aids the nurse in objectifying the subjective nature of the patient's pain.

T: Timing refers to documenting the onset, duration, and frequency of pain. This information can help to determine whether the origin of the pain is acute or chronic.

Duration of pain can indicate the severity of the problem. For instance, chest pain of less than 15 minutes duration may be angina, and pain lasting more than 15 minutes may indicate a myocardial infarction.

U: Understanding:is the patient's perception of the problem or cognitive experience of pain. Patients with known cardiac problems can tell the nurse whether their pain is the same as they had during myocardial infarction. Patients with a cerebral hemorrhage often describe experiencing the worst headache they have ever had.

2.The Observable or Objective Component:

When the patient's self-report is impossible to obtain, nurses can rely on the observation of behavioral indicators, which are strongly emphasized in clinical recommendations and guidelines for pain management in nonverbal patients.

Behavioral Pain Scale:

The BPS was tested mostly in nonverbal mechanically ventilated patients with altered levels of consciousness.Its validity was supported by significantly higher BPS scores during nociceptive procedures (e.g., turning, endotracheal suctioning, peripheral venous cannulation) compared with rest or non-nociceptive procedures (e.g., arterial catheter dressing change, compression stocking applications, and eye care).

Patient Barriers to Pain Assessment and Management

A. Communication:The patient who is mechanically ventilated cannot verbalize a description of the pain or the patients unable to self-report, the nurse relies on behavioral indicators to assess the presence of pain.

B. Altered Level of Consciousness and Unconsciousness

C. Older Adult Patients:Many older adult patients do not complain much about pain.

D. Neonates and Infants

The emphasis in pain assessment should be on behavioral indicators. Physiologic indicators should be interpreted with caution because they are also affected by disease, medications, and physiologic status.

E. Cultural Influences:The patient speaks a language other than that of the health team members.

F. Lack of Knowledge:Many patients and their families are frightened by the risk of addiction to pain medication. They fear that addiction will occur if the patient is medicated frequently or with sufficient amounts of opioids necessary to relieve the pain.

Health Professional Barriers to Pain Management

A. Addiction and Tolerance

 Addiction is defined by a pattern of compulsive drug use that is characterized by an incessant longing for an opioid and the need to use it to affect other than pain relief.

 Tolerance is defined as a diminution of opioid effects over time. Physical dependence and tolerance to opioids may develop if the medication is given over a long period.

B. Respiratory Depression:the fear that aggressive management of pain with opioids will cause critical respiratory depression. Opioids can cause respiratory depression, but in the critically ill, this is a rare phenomenon.

PAIN MANAGEMENT

1. Pharmacologic Control of Pain

1. Opioid agonists. The opioids most commonly used and recommended as first-line analgesics are the agonists.

A. Morphine. Morphine is the most commonly prescribed opioid in the critical care unit. Because of its water solubility, morphine has a slower onset of action and a longer

duration compared with lipid-soluble opioids (e.g.fentanyl). A more serious side effect requiring diligent monitoring is the respiratory depressant effect

B. Fentanyl is a synthetic opioid preferred for critically ill patients with hemodynamic instability or morphine allergy.

2. Nonopioids: A. Acetaminophen is an analgesic used to treat mild to moderate pain. It inhibits the synthesis of neurotransmitter prostaglandins in the CNS, and this is why it has no anti-inflammatory properties. B. Nonsteroidal Anti-inflammatory Drugs: The use of NSAIDs in combination with opioids is indicated in patients with acute musculoskeletal and soft tissue inflammation.

2. Nonpharmacologic Methods of Pain Management

A. Cold Application:Ice therapy was found to help reduce procedural pain in critically ill patients.

B. Massage

C. Relaxation:Relaxation is a well-documented method for reducing the distress associated with pain. Relaxation decreases oxygen consumption and muscle tone, and it can decrease heart rate and blood pressure. Not all patients are interested in relaxation therapy. For those patients, deep breathing exercises may be helpful.

Reference

Urden L. D., Stacy K. M., Lough M. E., Critical care nursing: diagnosis

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