

Chapter 20

ACUTE PAIN MANAGEMENT IN EMERGENCY

Learning Objectives:

By the end of this lecture, participants will be able to:

- Define pain in emergency
- Know why pain matters in emergency
- Know classifications and assessment of pain
- Manage pain properly

INTRODUCTION

According to International Association for the Study of Pain, pain is defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage. (IASP 1979). Acute pain is useful and protective because it is an alarm signal and for the safeguarding of bodily integrity, in contrast to chronic pain. However, when the pain is recognized its treatment must begin without delay because at this time it has no more utility. Indeed, it could have deleterious effects.

Why pain in ED:

Pain is the most common reason patient presents to emergency department. Studies have shown that pain is one of the most common reasons patients visit the emergency department. Pain, as a presenting complaint, account for up to 78 % of visits to the ED, but pain was found to be frequently under treated. The management of pain is often regarded as less important compared to arriving at diagnosis and treatment proper. Yet a physician's primary duty is to comfort, manage and reduce the suffering of a patient. Health Care Team Members have an ethical obligation to offer pain relief as a health care professional's primary commitment to promote patient wellbeing and to prevent or diminish pain and suffering, respect for all persons and justice Pain should be addressed as the fifth vital sign.

Classification of pain:

Pain is classified according to:

Time line-

- Acute pain (acute pain from inflammation, injury etc.).
- Chronic pain: pain that last beyond the expected healing of the original cause.
- Recurrent pain.

Inferred pathology-

- Nociceptive pain (somatic and visceral Pain).
- Neuropathic pain.
- Myofascial pain.

Table 20.1 Differences between acute and chronic pain

Acute pain	Chronic pain
Corresponds to degree of injury.	No correlation between injury and pain.
Serves as defense to protect and warn the body from potential danger.	Do not serve purpose.
Self-limiting: heals when initial cause is cured.	Last beyond the expected healing of the cause.
Response to conventional therapy.	Very poor response to analgesia.
Physiological response corresponds to pain intensity.	Physiological response does not correspond to pain intensity.

Good outcomes.	Poor outcomes/doctor shopping.
Attracts sympathy from care givers.	
Subjective equals objective.	Subjective exceeds objective findings.
No psychosocial co-morbidity.	Accompanied with lots of psychosocial co-morbidities.

Mechanism of acute pain

Acute pain in emergency situations is mainly due to excessive nociception which is secondary to an inflammatory reaction, a trauma or a visceral lesion. However, neuropathic pain was present in more than 20% of patients in the ED. The behavior of patients in response to pain varies greatly depending on many factors such as psychosocial, emotional, and past experience. Therefore, pain experience varies from person to person. This requires that pain management be adapted to each patient.

Assessment of pain

The most common reason for unrelieved pain is the failure of staff to routinely assess the pain. While assessing the pain, it is important to remember that pain is subjective and the patients’ self-report is the single most reliable indicator of the pain.

The Goal of the pain assessment is to:

- Achieve the diagnosis of the pain
- To identify the underlying cause of the pain
- To determine type, location and intensity of the pain
- To develop targeted treatment plan.

The history should include, location, temporal pattern, quality of pain (burning, shooting, cramping), onset, duration, relief or exacerbation, and response to treatment. The intensity of the pain can be measured on 11-point numerical rating scale or verbal rating as mild, moderate and severe and chart on the vital chart as the 5th vital sign. For the patients in extremes of age who cannot verbalize the pain score, pain assessment can be done through Behavior assessment, such as Facial expression, body posture, anxiousness, etc. In children, Face pain scale can be used.

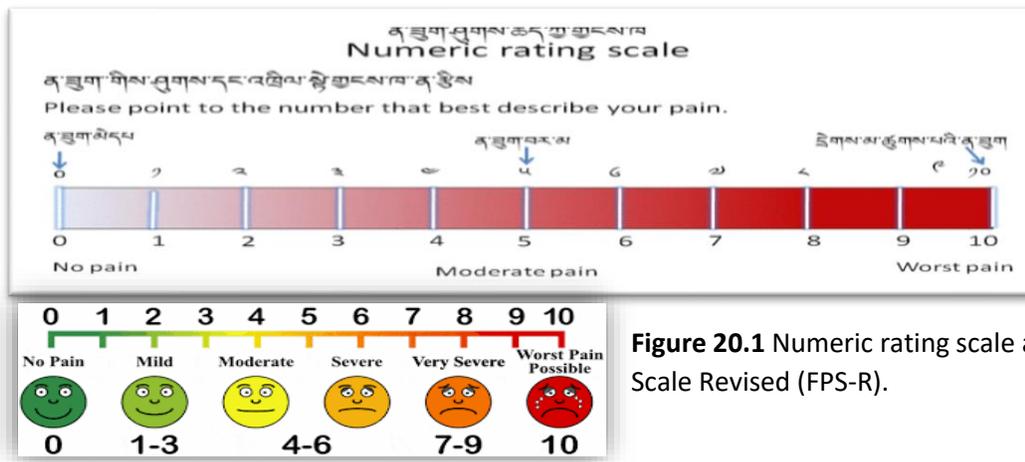


Figure 20.1 Numeric rating scale and Face Pain Scale Revised (FPS-R).

Management of pain in emergency

General consideration: the treatment should be early. It must be adapted to the following parameters.

- The intensity of the pain
- The pathology
- The patient and response to treatment

Always follow the WHO analgesia ladder. While in chronic pain, the analgesia is to climb the ladder, but in acute pain it is important to descend the ladder. The best way to administer the analgesia is: By the clock, by the mouth and by the ladder.

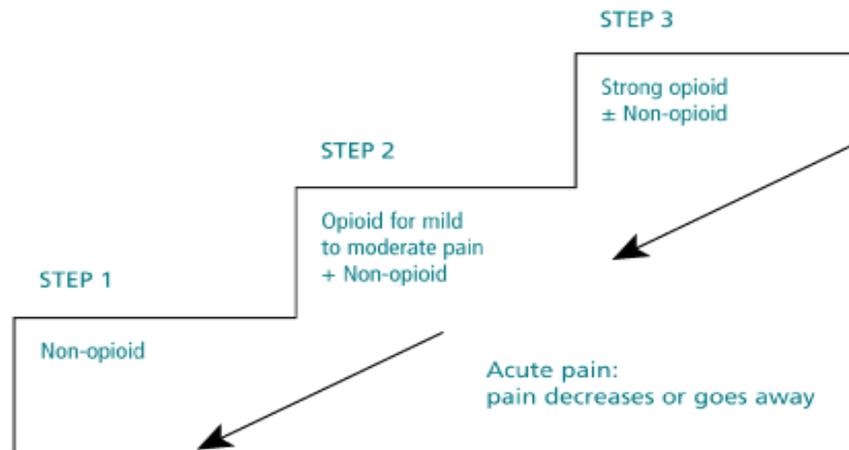


Figure 20.2 WHO analgesia ladder.

Implementation of Analgesia

Principles of analgesia

The implementation of analgesia is based on 2 phases:

Induction: the objective of this phase is to obtain pain relief as quickly as possible. It continues until the goal is not reached.

Maintenance: once the relief of pain is reached, with a steady state, the maintenance of treatment is planned with the setting up of appropriate prescriptions.

Analgesia is based on two principles:

1. Multi-modality:

Multimodal analgesic includes combination of different modes of pain relief, including analgesics drugs, nerve blocks, CAM, etc., and also combinations of analgesic drugs. Combination of analgesics also increases the analgesia effect while reducing the side effects of individual drugs. However, the combination should be of the drugs of different mode of action. For example: a combination of NSAIDs to morphine has a documented 30-50% sparing effect on morphine consumption, reduces some side effects due to the morphine, and improves the relief of pain. Combination analgesics include, Ultracet, Diclowin, etc.

2. Titration:

This principle concerns opioids: the repeated injections of small doses (2 to 3 mg) of morphine every 5 minutes permits the obtaining of pain relief with a final dose adapted to the patient. Otherwise, this permits the reduction of the risk of side effects. Indeed, there is wide inter-individual variability concerning the necessary dose to achieve pain relief. As such, this dose is not predictable. This technique permits the finding of a better dose for each patient.

Implementation of a titration of morphine in the ED:

For a patient with a severe pain, there is an indication for a strong opioid.

Example of a protocol of titration in adult patients:

Morphine intravenously 3 mg (2 mg if weight <60kg) every 5 minutes.

Objective: VAS \leq 30/100.

Monitoring: RR, Sedation and VAS.

The titration will be stopped if: the objective reached; the sedation score is \geq 2; the respiratory score \geq R1; or the RR is <10; in the presence of side effects, like vomiting, strong nausea etc. When the steady state for relief is reached, close monitoring (every 15 minutes) will last for 1 to 2 hours.

Failure of analgesia

When there is a failure of analgesia, a number of factors must be researched:

- Is the analgesia adapted to the intensity level?
- Is the dose of used painkillers in accordance with recommendations and needs?
- Are the time intervals between two administrations in accordance with recommendations?
Example: the failure to respect the 5 minutes intervals between injections of morphine during titration is a factor of failure.
- Is there a multi-modal analgesia?

The mechanism of the majority of acute pains in emergency medicine is due to excessive nociception. However, Neuropathic pains could be present in more than 20% of cases in the ED

Conclusion

The management of acute pain in emergency medicine is based on 3 principles: the evaluation of pain intensity with a scale adapted to the patient, a treatment adapted to the intensity, the patient, their pathology and the protocols. The objective is to relieve pain and avoid the side effects due to painkillers. In this way, training and the knowledge of caregivers are fundamental, particularly in relation to the use of opioids. Each structure must develop its own protocols of care and monitoring. These protocols must be adapted not only to patients and their pathology but also to the knowledge of caregivers themselves.