



Management of Pain

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Abstract

Pain management is improving steadily over the past few years, but training and professional education is still lacking in many professions. Untreated or undertreated acute pain could have detrimental effects on the patient in terms of comfort and recovery from trauma or surgery. Acute undertreated pain can decrease a patient's vascular perfusion, suppress the immune system, increase oxygen demand and possibly risk increased incidence of venous thrombosis. Although acute postoperative pain needs to be managed aggressively, patients are most vulnerable during this period for developing adverse effects, and therefore, patient assessment and careful drug therapy evaluation are necessary processes in therapeutic planning. Acute pain management requires careful and thorough initial assessment and in addition to frequent dosage adjustments follow-up reassessment is also needed and managing analgesic induced side effects. Analgesic selection and dosing must be based on the patient's past and recent analgesic exposure. There is no single acute pain management regimen that is suitable for all patients. Analgesics must be tailored to the individual patient.

Key words: *Nociceptive pain, Neuropathic pain, Verbal rating scale, Numerical rating scale, Visual analogue scale.*

Introduction

The International Association for Study of Pain (IASP) defines pain as “**An unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage¹.**” It is to be noted that pain is not just a physical sensation but also an *emotional experience*. It varies from person to person and in the same person from time to time. A simple definition of pain is “*Pain is what the patient*

says, hurts”². The emphasis is on *the patient's experience*.

In recent decades, technological advances have refined the clinical assessment and management of patients. However, doctors must rely heavily on knowledge, interviewing techniques, and physical assessment skills to competently assess and manage patients with pain, because these skills have not been replaced by technology. Worsening of the pain experience could be by muscle spasm,

peripheral and central sensitization and recruitment. Unrelieved acute pain can cause chronic pain, and long standing pain can cause anatomical and even genetic changes in the nervous system.

Pain can be classified based on pain physiology, intensity, temporal characteristics, type of tissue affected, and syndrome

- **Time course**
 1. Acute 2. Chronic
- **Patho-physiology**
 1. Nociceptive 2. Neuropathic
 3. Inflammatory
- **Intensity**
 1. Mild-moderate-severe
 2. Numeric pain rating scale (0 to 10)
- **Type of tissue involved**
 1. Skin 2. Muscles 3.Viscera 4.Joints
 - 5.Tendons 6.Bones
- **Syndromes**
 1. Cancer 2.Fibromyalgia 3. Migraine
 - 4.Others

Acute pain

It is *"the normal, predicted physiologic response to an adverse chemical, mechanical, or thermal stimulus associated with surgery, trauma, or acute illness"*³. It is a result of activation of pain receptors (nociceptors) at the damaged tissue site. This type of pain generally occur post-surgery, traumatic injury, tissue damage or inflammatory processes. It plays an important role in providing a warning signal that something is wrong and requires further examination. It is self-limiting and resolves over days to weeks, but can persist for 3 months or longer as the healing occurs. It can activate the sympathetic branch of the autonomic nervous system and produce responses such as hypertension, tachycardia, diaphoresis, pallor, shallow respiration, restlessness, pupil dilation, guarding behavior, and facial grimacing. Inadequate relief of acute pain can contribute to hypercoagul ability and impaired immunity, which may result in complications such

as venous thromboembolic disease and infections^{4,5}. Inadequately or inappropriately controlled acute pain can be one of the factors in the development of chronic pain,^{5,6,7} extended hospital stay, readmission, and patient dissatisfaction^{8,9,10}.

Chronic pain

It is pain that lasts longer than 12 weeks. It is defined *"As the pain which persists for more than a month beyond the usual course of an acute disease or a reasonable time for an injury to heal, or is associated with a chronic pathological process which causes continuous pain, or pain which recurs at intervals for months or years"*¹¹. The most common sources of pain stems from headache, joint pain, pain from injury, and backache. Other kinds of chronic pain include tendinitis, sinus pain, carpal tunnel syndrome, pain affecting specific parts of the body viz: the shoulders, pelvis, and neck. Generalized muscle or nerve pain can also develop into a chronic condition. Chronic pain may originate with an initial trauma/injury or infection, or there may be an ongoing cause of pain.

Nociceptive and neuropathic pain

This is a patho-physiological type of pain. The peripheral nerve ending (nociceptor) transmits the pain impulse to the dorsal horn of the spinal cord, where it gets modified before onward transmission to the brain. Any pain caused primarily by stimulation of the nociceptor can be said to be nociceptive pain. If pain is not caused by a stimulus applied to the nociceptor, but is caused by impulse generation within the pathway proximal to the nociceptor (this could be in the nerve, the spinal cord or the brain), it is called *neuropathic pain*. (Fig. 1 & 2).

Nociception involves the 4 processes of transduction, transmission, perception, and modulation^{12,13}

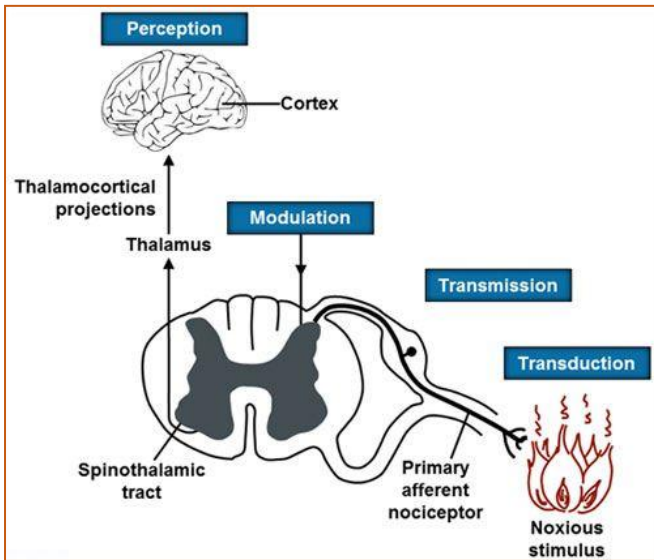


Fig.1. Pathways for Nociceptive Pain

thalamus, fibers send the nociceptive message to the somatosensory cortex, parietal lobe, frontal lobe, and the limbic system, where the third nociceptive process known as *perception* occurs¹⁴. Perception, the conscious experience of pain, it involves both the sensory and affective components of pain. Clinical research in recent years has yielded greater understanding of the limbic system at the area of the anterior cingulate gyrus and its role in the emotional response to pain¹¹. The final nociceptive process is *modulation*; it results from activation of the midbrain. Multiple types of neurons from this area that have a variety of neurotransmitters, including endorphins, enkephalins, serotonin (5-HT), and dynorphin, descend towards the lower areas in the central nervous system; these neurons stimulate the release of additional neurotransmitters, which ultimately trigger the release of endogenous opioids which in turn results in the inhibition of the pain transmission impulse at the dorsal horn.

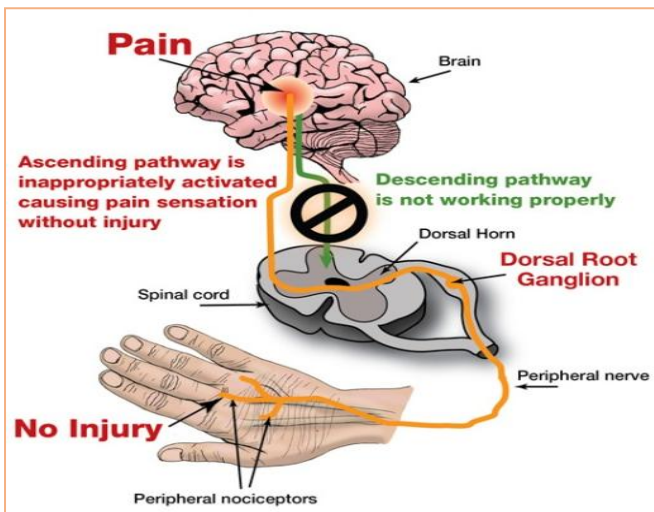


Fig. 2. Pathways for Neuropathic Pain

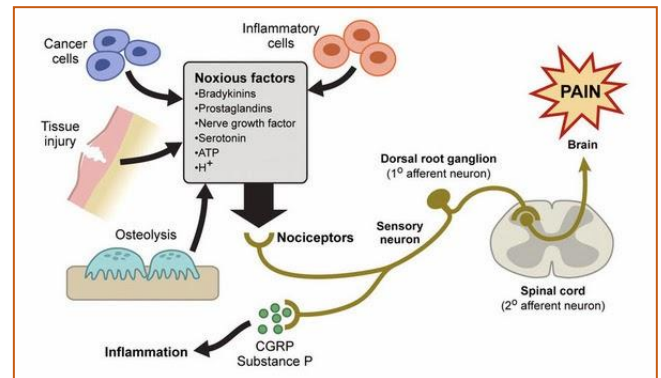


Fig. 3. Mechanisms of pain

These processes are highly complex, but a simple summary can aid understanding of pain mechanisms and pain interventions (Fig.3). Firstly the damaged tissues release chemical mediators such as prostaglandins, bradykinin, serotonin, substance P, and histamine. These substances then activate nociceptors, resulting in transduction, or the generation of an action potential (an electrical impulse). Secondly the process; *transmission* - the action potential moves from the site of injury along afferent nerve fibers to nociceptors at the spinal cord. Release of substance P and other neurotransmitters carry the action potential across the cleft to the dorsal horn of the spinal cord, from where it ascends the spinothalamic tract to the thalamus and the midbrain. Finally, from the

Assessment of Acute Pain

Pain assessment can be challenging because of the subjectivity and multidimensionality of the pain experience. The patient's self-report of pain includes the sensory, emotional, psychological, and cultural components of the pain experience, which cannot be captured on the one-dimensional tool used in general day to day practice¹⁵. A comprehensive pain assessment includes pain location and quality, aggravating and alleviating factors, timing and duration, pain relief and intensity^{15,16}.

The comprehensive pain assessment should be performed when patient present with pain to the healthcare setting and at the onset of pain. To determine effectiveness of the treatment further interventions and subsequent pain assessments should focus on the nature of the pain, pain intensity, and patient's response to the treatment. Pain assessment tools should be valid and reliable for the patient population in which they are used. Pain measurement tools can be one-dimensional (measuring the quantity of one dimension of the pain experience, for example intensity) or multidimensional (measuring a combination of dimensions). Different types of pain measurement are required for different types of pain. Acute pain usually requires a one-dimensional approach to pain measurement, whereas chronic pain usually requires a multidimensional.

One-dimensional tools are simple and quick to use and understand, and are considered accurate

measures of pain intensity¹⁷. One-dimensional tools assess one dimension of the experience – usually pain intensity – and should be used to assess pain at rest and on movement as well. Disadvantages of one-dimensional tools are that they oversimplify the pain experience, and some patients find it difficult to express their subjective multidimensional experience of pain as a number, or as a mark on a line.

Four types of pain measurement tool are used for acute pain management:

- Verbal rating scale(VRS) or Verbal descriptor scale(VDS) or Categorical scale;
- Numerical rating scale(NRS); also known as the Numerical Pain Intensity Scale (NPI);
- Visual analogue scale(VAS);
- Picture scales/Pain drawings.

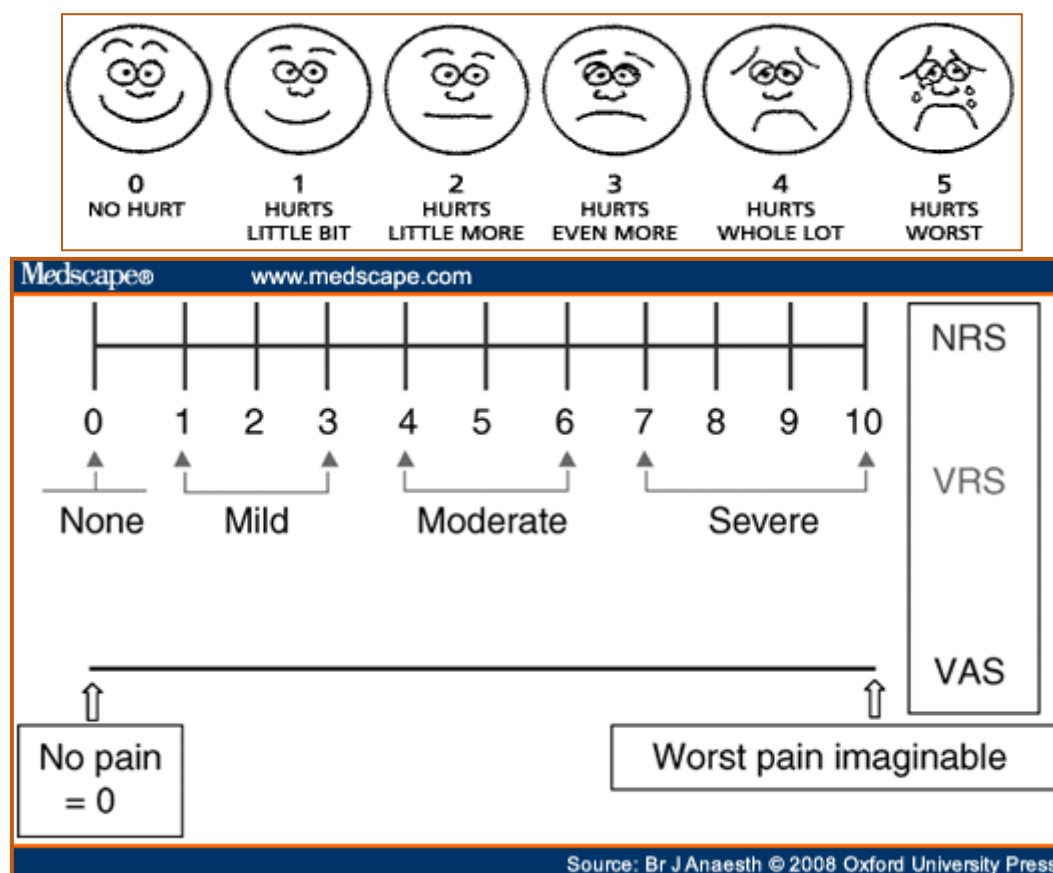


Fig. 4. Pain measurement tools

Verbal rating scales

A verbal rating scale (VRS) consists of a list of words used to describe pain. The number of words used varies, and up to 20 different VRS have been used till today to describe pain. The words are usually listed in order from the least intense pain to the most intense pain. They are sometimes assigned a score to represent the level of pain, for example '0' = no pain, '1' = mild pain, '2' = moderate pain and '3' = severe pain. Patients are asked to choose the word that best describes their experience of pain.(Fig.4)

Advantages of VRS

- They enable patients to express their pain in words rather than in numbers, allowing them to describe their pain
- Patients find them easy to understand and use
- They can be quick and easy to explain it to the patients
- They are easy to score and to document

Studies have shown that these scales are of benefit for postoperative and critical care patients and to patients with cognitive impairment, limited numerical skills, physical disabilities, visual impairment wherein it is really difficult for the patients to express their intensity of pain. A major disadvantage of a VRS is that the different words used to describe pain have different meanings for different people. Therefore a patient may be unable to find a word that accurately reflects his experience of pain¹⁸. VRS can be difficult to use for patients who have language difficulties or for those with low mental capacity.

Numerical rating scale

Numerical rating scale (NRS) and verbal numerical scale (VNS) consist of a set of numbers (usually '0' to '10') represented along a horizontal or vertical line and may be represented as a pain thermometer or a box scale. There is sometimes an anchor word at each end of the line, for example '0' = no pain and '10' = worst pain imaginable (Fig. 4). Patients are asked to point to

or draw around the number that best describes their pain intensity. In the case of a VNS, patients verbally indicate the number that best describes their pain intensity¹⁹. This type of scale is quick and easy for most patients to understand, express and use. An adaptation of the numerical rating scale is available in different languages from the Pain Society at its website (www.painsociety.org/pain_scales.html). There are certain groups of patients for whom the NRS/VNS may be inappropriate, including those with a cognitive impairment or postoperative confusion²⁰.

Visual analogue scales

A visual analogue scale (VAS) is a 10cm horizontal or vertical line with no words or numbers along its length (Fig 4). Usually words such as '*no pain*' and '*worst pain imaginable*' are anchored to the ends. The patient is asked to mark on the line in pen or pencil, between the two end-points, the place that best reflects their current pain intensity. The advantages of the VAS are that it is relatively easy to teach, understand, score and document. The VAS can be easily used in research studies with an objective of pain management. Despite of its advantages, using a VAS is a complicated process and requires greater cognitive skills, which may reduce its appropriateness in acute medical, postoperative, critically ill, physically and visually impaired or cognitively impaired patients, people with a learning disability, people with impaired consciousness and those with language difficulties¹⁹.

Picture scales and pain drawings

There are variety of picture scales/pain drawing tools, of those the face picture scales are the most commonly used in clinical practice. Face picture scales are easy to use and have been developed to measure intensity of pain and its behaviour. Depending on the type of face picture scale, they may be used by the patient or an observer¹⁹, as the suffering produced by pain is often evident on the

face of the patient²¹. Studies have shown that these scales are beneficial in patients who have learning difficulties or poor language and communication skills²².

Multidimensional tools

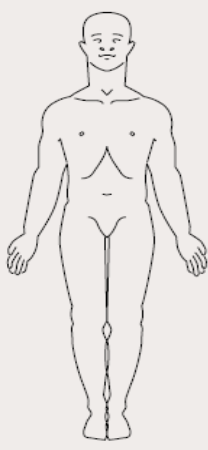
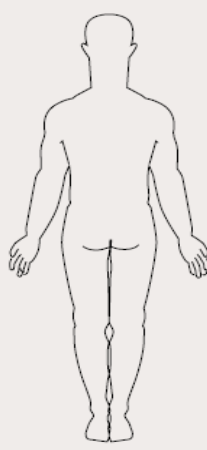
These tools are usually used to assess chronic pain. They are more complex and lengthy to complete than one-dimensional tools hence it is required for the patient to have good language and verbal skills. Some multidimensional assessment tools have been developed to specifically assess certain dimensions of pain, for example behavioural, psychological and neuropathic. Pain

diaries are being used by the patients to record their own multidimensional experience of pain. One of the tools commonly adapted for clinical practice is the McGill pain questionnaire (MPQ). There are two forms of the MPQ, long and short. The long questionnaire (Fig. 5) is a self-report measurement tool that provides a lot of information about the patient’s multidimensional pain experience. It is designed basically to assess the quality and intensity of pain associated with specific pain problems and to aid the diagnosis and treatment planning. It has also been used to evaluate the effectiveness of interventions.

Patient's name _____		Date _____	Time _____	am/pm
PRI: S	A	E	M	PRI(T)
(1-10)	(11-15)	(16)	(17-20)	(1-20)

1 Flickering <input type="checkbox"/>	8 Tingling <input type="checkbox"/>	16 Annoying <input type="checkbox"/>	19 Cool <input type="checkbox"/>
Quivering <input type="checkbox"/>	Itchy <input type="checkbox"/>	Troublesome <input type="checkbox"/>	Cold <input type="checkbox"/>
Pulsing <input type="checkbox"/>	Smarting <input type="checkbox"/>	Miserable <input type="checkbox"/>	Freezing <input type="checkbox"/>
Throbbing <input type="checkbox"/>	Stinging <input type="checkbox"/>	Intense <input type="checkbox"/>	
Beating <input type="checkbox"/>	9 Dull <input type="checkbox"/>	Unbearable <input type="checkbox"/>	20 Nagging <input type="checkbox"/>
Pounding <input type="checkbox"/>	Sore <input type="checkbox"/>		Nauseating <input type="checkbox"/>
	Hurting <input type="checkbox"/>	17 Spreading <input type="checkbox"/>	Agonising <input type="checkbox"/>
2 Jumping <input type="checkbox"/>	Aching <input type="checkbox"/>	Radiating <input type="checkbox"/>	Dreadful <input type="checkbox"/>
Flashing <input type="checkbox"/>	Heavy <input type="checkbox"/>	Penetrating <input type="checkbox"/>	Torturing <input type="checkbox"/>
Shooting <input type="checkbox"/>		Piercing <input type="checkbox"/>	
	10 Tender <input type="checkbox"/>	18 Tight <input type="checkbox"/>	PPI
3 Pricking <input type="checkbox"/>	Taut <input type="checkbox"/>	Numb <input type="checkbox"/>	0 - No pain <input type="checkbox"/>
Boring <input type="checkbox"/>	Rasping <input type="checkbox"/>	Drawing <input type="checkbox"/>	1 - Mild <input type="checkbox"/>
Drilling <input type="checkbox"/>	Splitting <input type="checkbox"/>	Squeezing <input type="checkbox"/>	2 - Discomforting <input type="checkbox"/>
Stabbing <input type="checkbox"/>		Tearing <input type="checkbox"/>	3 - Distressing <input type="checkbox"/>
Lancinating <input type="checkbox"/>	11 Tiring <input type="checkbox"/>		4 - Horrible <input type="checkbox"/>
	Exhausting <input type="checkbox"/>		5 - Excruciating <input type="checkbox"/>
4 Sharp <input type="checkbox"/>			
Cutting <input type="checkbox"/>	12 Sickening <input type="checkbox"/>	Brief <input type="checkbox"/>	Rhythmic <input type="checkbox"/>
Lacerating <input type="checkbox"/>	Suffocating <input type="checkbox"/>	Momentary <input type="checkbox"/>	Periodic <input type="checkbox"/>
		Transient <input type="checkbox"/>	Intermittent <input type="checkbox"/>
5 Pinching <input type="checkbox"/>	13 Fearful <input type="checkbox"/>		Continuous <input type="checkbox"/>
Pressing <input type="checkbox"/>	Frightful <input type="checkbox"/>		Steady <input type="checkbox"/>
Gnawing <input type="checkbox"/>	Terrifying <input type="checkbox"/>		Constant <input type="checkbox"/>
Cramping <input type="checkbox"/>			
Crushing <input type="checkbox"/>	14 Punishing <input type="checkbox"/>		
	Gruelling <input type="checkbox"/>		
6 Tugging <input type="checkbox"/>	Cruel <input type="checkbox"/>		
Pulling <input type="checkbox"/>	Vicious <input type="checkbox"/>		
Wrenching <input type="checkbox"/>	Killing <input type="checkbox"/>		
7 Hot <input type="checkbox"/>	15 Wretched <input type="checkbox"/>		
Burning <input type="checkbox"/>	Blinding <input type="checkbox"/>		
Scalding <input type="checkbox"/>			
Searing <input type="checkbox"/>			

Comments:

Source: Turk and Melzack, 1992

Fig. 5. The McGill Pain Questionnaire. The descriptors fall into four major groups: sensory (S), affective (A), evaluative (E) and miscellaneous (M). The rank value for each descriptor is based on its position in the word set. The sum of the rank values is the pain rating index (PRI). The present pain intensity (PPI) is based on a scale of 0–5.

Long questionnaire is divided into three sections:

- Pain rating index (PRI);
- Present pain intensity scale (PPIS);
- Body chart.

The pain rating index consists of 78 words describing pain. These words are divided into 20 lists, and within each list the words are ranked in order of the least to the most painful in terms of intensity. These 20 lists represent four major dimensions of pain quality – sensory, affective, evaluative and miscellaneous. The patient is asked to select the word that best describes their pain and feelings at that time. This word is allocated a score depending on its position in the list, and the overall sum of the scores is calculated to produce the total pain rating index, or the estimated intensity of the patients' pain experience. The present pain intensity scale consists of a verbal rating scale of 0–5. The body chart is intended for patients to mark the location of their pain(s). The long MPQ is not simple to complete and therefore its use with patients who have rapidly changing or acute pain is limited. It requires time to educate the patient and will take the patient a minimum of five minutes to complete. Its completion requires the patient to have sophisticated language and communication skills and good motor coordination, although a nurse may help the patient to fill in the chart. The MPQ has also been translated into a variety of languages. The short MPQ may be used for evaluating the effectiveness of interventions for patients who have acute, intermittent or chronic pain.

Short questionnaire is divided into three sections

1. 15 words that describe the sensory and affective dimensions of pain;
2. A visual analogue scale;
3. A present pain intensity scale.

The patient is asked to rank the intensity of each of the 15 words describing pain on a verbal rating scale of 0–3. The visual analogue scale and the present pain intensity scale are used to gain

additional information regarding the intensity of pain.

Other pain measurement tools

Additional pain management tools have been developed to measure dimensions of pain in specific groups of patients. For example the Abbey pain scale is used for patients with cognitive impairment²³ and Zwakhalen et al's scale of non-verbal indicators for the patients with learning disability¹⁶. These tools may be used by an observer to assess one or more dimensions of the pain experiences in patients.

They may include some of following:

- Behaviour;
- Physiological changes;
- Vocalisation;
- Body language;
- Physical changes;
- Changes in activities of daily living;
- Various changes during manipulation.

Management of pain

Several important principles serve as guide in managing acute pain at initial stages^{24,25}. Most important amongst these is the need to prevent pain whenever possible by administration of analgesics before the occurrence of pain. Next is to try to achieve a level of comfort that allows the patient to function without any discomfort. E.g, in postoperative patients, functional goals may be deep breathing, ambulating, and being able to participate in physical therapy. In patients with chronic pain, goals may include going to work or walking the dog.

Pain relief can be achieved either by applying *pharmacologic* or *non-pharmacologic* measures. Optimal pain relief seems to result from a multimodal approach²⁶⁻³⁰. combining a variety of medications and possibly non-pharmacologic measures. With *multimodal analgesia*, also known as "*balanced analgesia*," the patient is given 2 or more analgesic agents and/or analgesics as a part of the treatment.

Research has consistently observed a great individual variability in response to analgesics. According to the recent research, it indicates that much of this variability occurs as a result of genetic differences.^{24,31-34} A patient may experience better relief from pain or encounter more adverse effects with a certain opioid or NSAID as compared to another opioid or NSAID

Pain medications can be divided into 3 categories²⁴

- Non-opioid analgesics
- Opioid analgesics
- Co-analgesics (or adjuvant analgesics).

To treat pain correctly, it is important to find out whether the patient's pain is constant or incidental. *Constant pain is best treated with an "around the clock" (ATC) regimen,^{24,25}* by giving the patient medications regularly, an adequate blood level of analgesic can be maintained. *Incidental pain can be best prevented by giving an analgesic before the development of pain in the patient.* E.g, administration of pain medication 30-60 minutes before physical therapy will help to minimize therapy-associated pain and maximize the patient's participation. Pain that increases above the patient's controlled baseline level of pain is referred to as '*breakthrough pain*'. Incidental pain can occur as the patient's only pain, or it can occur as a breakthrough pain¹². Patients receiving ATC analgesics for continuous pain and patients with pain that occurs incidentally are provided with short-acting, '*as-needed*' (PRN) analgesics. Because some patients do not request PRN medication,²⁵ the nurse must act as a patient advocate and offer the patient these interventions for pain.

Reassessment of the patient's response to treatment of pain is paramount. After a patient has been given a medication and/or a non-pharmacologic measure has been used, the nurse must check the patient in a timely manner (depending on expected time of action of intervention) to weigh for the efficacy of the treatment and for any adverse effects that may have been encountered by the patient.

Non-Opioid Pharmacologic Treatment

This includes Acetaminophen, Aspirin, and nonsteroidal anti-inflammatory drugs (NSAIDs). Used individually, these drugs are very much effective for mild to moderate pain. In conjunction with opioids, these agents can have an opioid dose-sparing effect, hence lowering the opioid requirement for a patient which in turn reduces the potential for the occurrence of opioid-related adverse effects. The nurse should be aware of NSAID-related risks and should raise a concern with the prescriber if a traditional NSAID is ordered for a patient who is receiving anticoagulation, who has renal compromise, or who has a known allergy or sensitivity to aspirin or other NSAIDs. Response to a particular anti-inflammatory agent is highly individual: If one NSAID does not work for a patient, another might be effective.

All non-opioid medications can be given orally. They are also available in various other dosage forms, Acetaminophen, Aspirin, and some NSAIDs are available as suppositories for rectal administration. The NSAIDs Ketorolac and Ibuprofen are available in a parenteral form for intravenous administration. Some NSAIDs are available in topical forms, either as a cream or a patch.

Opioid Pharmacologic Treatments

Opioid analgesics act by binding to a specific receptor and activating receptor sites in the central and peripheral nervous systems^{24,35,36}. Once these receptor sites are activated, the signal for pain transmission is blocked through several mechanisms, producing analgesic effect. The first-line opioid analgesics, such as Morphine, Fentanyl, Hydromorphone, and Oxycodone, are μ agonist opioids as they primarily bind to the μ opioid receptors which produce both wanted (analgesia) and unwanted (adverse) effects. The μ agonist opioids are the cornerstone of moderate to severe acute pain management and are added to non-opioids as part of a multimodal treatment approach.

Opioids are most commonly used in treating moderate to severe acute pain; these include Morphine, Fentanyl, Oxycodone, and Hydromorphone. Based on their onset and duration of action oral opioids are available in short-acting and long-acting (modified, controlled, or extended-release) preparations. Intravenous patient-controlled analgesia makes it feasible for the patient to manage their pain by self-administering opioid doses and is one of the most common methods used in treating acute pain, particularly postoperative pain. Preservative-free preparations are also available which are given via epidural and intrathecal delivery³⁷. These preparations can be administered as single dose injections or in solutions for epidural analgesia, with or without the capability for patient-controlled analgesia. Intramuscular injections are no longer recommended in managing any type of pain. The American Pain Society²⁴ describes the disadvantages of intramuscular opioid injections, stating that they are painful and have highly variable absorption, with a 30- to 60-minute lag to peak effect.

Patients should be assessed systematically for adverse effects during opioid therapy and, if observed, the patients must be treated with appropriate therapies.

Pharmacologic Treatments: Co-analgesics/Adjuvant Analgesics

Co-analgesics, as described by the American Pain Society,²⁴ are a diverse group of medications which enhance the effect of typical analgesic medications or provide analgesia for specific types of pain. There are vast number and types of co-analgesics. Some of the commonly used co-analgesics are *local anesthetics, muscle relaxants, and some anticonvulsants*.

Miscellaneous medications used in treating pain includes Tramadol, Tapentadol, methadone and ketamine

Non-pharmacologic Treatment of Pain

Non-pharmacologic therapies are equally important to medications in relieving pain. They involve physical modalities, such as massage, acupuncture, application of heat or cold, positioning, and deep breathing, and psychosocial modalities, such as bio feedback, distraction, and imagery. Nurses should be aware and well versed with these essential treatments.

With chronic pain, the prime objective of treatment is to reduce pain and improve function, which will aid the person to resume day-to-day activities effectively. Both, patients and their healthcare providers have several numbers of options for the treatment of pain. Some are more effective than the others. Whatever the treatment plan, the important thing to remember is that chronic pain usually cannot be cured, but it can definitely be managed well.

The following treatments are among the most common ways to manage pain. Medications, acupuncture, electrical stimulation, nerve blocks, or surgery are some treatments used for chronic pain. In some of the cases less invasive psychotherapy, relaxation therapies, biofeedback, and behavior modification can also be used to treat chronic pain. These methods can be powerful and effective in some people in managing pain. When it comes to chronic pain treatment, many people find adding complementary or alternative medicine (CAM) approaches which can provide additional relief and betterment for the patient. These may include tai chi, acupuncture, meditation, massage therapies, and similar treatments.

Self-management of chronic pain holds great promise as a treatment approach. In self-management programs, the individual patient is the active participant in his or her pain treatment-engaging in problem-solving, pacing, decision-making, and taking actions to manage their pain. Although self-management programs can differ, but they have some common features. Their approach is that the person suffering with pain needs help learning to think, feel, and do better,

despite the persistence of pain. Improving communication with health-care provider is part of that empowerment. Through NIH-supported research, starting successful self-management programs have reduced many barriers to effective pain management, regardless of the underlying conditions. Individuals who participate in these programs have significantly increased their ability in dealing with pain. They improve their ability to be active, healthy, and involved members of their communities. In fact, new research suggests that the best self-management programs teach people different ways of thinking about pain and responding to it, making their actions to relieve it more effective.

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