Basic principles of pain management: assessment and intervention


Summary
This article, the first in a series written by pain nurse specialists, provides an overview of the nature, causes and structured management of acute, chronic and neuropathic pain. The differences between nociceptive and neuropathic pain, and treatment options are identified. The pain management service’s roles are described in the context that a person’s experience of pain is the result of biological, psychological and social factors. Future articles will explore the physiology and pharmacology of pain, how patients express pain and interventions for acute and chronic pain. They will also provide guidance on managing pain in challenging circumstances.

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Keywords
Acute and chronic pain, analgesia, pain management

Assessing pain
Pain is a complex phenomenon, which is influenced by an individual’s previous experience of pain, psychosocial factors and how the brain interprets the messages it receives (Newton-John 2005). A pain assessment tool should be used to aid diagnosis and determine the effectiveness of any interventions. The assessment tool needs to be easy to understand by both staff and patients, and must be a valid and reliable measure of pain. The choice of tool will be influenced by the required sensitivity of assessment. A simple unidimensional tool, for example a 0-10 numerical rating scale where 0=no pain, 10=worst pain imaginable, which solely measures

Defining pain
McCaffery (1972) defined pain as ‘whatever the experiencing person says it is, and exists whenever he says it does’. The International Association for the Study of Pain provides a comprehensive definition of pain as ‘an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage’ (Merskey and Bogduk 1994). Pain is an individual experience and a complex phenomenon influenced by biological, psychological and social factors.

Classifying pain
Pain may be acute (less than three months duration) or chronic (more than three months duration). It may also be classified according to the cause of pain. Nociceptive pain results from damaged tissues, while neuropathic pain results from nerve damage or disease (Macintyre and Schug 2007). The characteristics of nociceptive and neuropathic pain are outlined in Table 1.

Pain has many causes. It may result from a chronic condition such as arthritis or fibromyalgia, it may occur during an intervention (procedural pain), after surgery, in response to an injury or as a symptom of disease. The prevalence of pain among cancer patients ranges from 14% to 100%, with up to 70% of patients who are having active treatment experiencing pain (Christo and Mazloomdoost 2008).

PAIN IS A COMPLEX physiological and psychological phenomenon that is subjective in nature. Pain may be acute or chronic and may persist even when tissue healing has occurred. The assessment of pain and the documentation of the effectiveness of any interventions are fundamental principles of successful pain management. Both non-pharmaceutical and pharmacological treatments may be employed to minimise the patient’s experience of pain.

Table 1: Defining and classifying pain

<table>
<thead>
<tr>
<th>Pain Type</th>
<th>Description</th>
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<tbody>
<tr>
<td>Nociceptive</td>
<td>Pain resulting from damaged tissues</td>
</tr>
<tr>
<td>Neuropathic</td>
<td>Pain resulting from nerve damage or disease</td>
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Table 1: Characteristics of nociceptive and neuropathic pain

<table>
<thead>
<tr>
<th></th>
<th>Nociceptive pain</th>
<th>Neuropathic pain</th>
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<tbody>
<tr>
<td>Subtypes</td>
<td>Somatic – sharp, stabbing pain usually well localised to the area of injury.</td>
<td>Pain is usually experienced in combination with a sensory loss. It may be associated with increased sympathetic activity, for example changes in the skin temperature and sweating.</td>
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<tr>
<td></td>
<td>Visceral – dull, heavy, aching pain that may occur over a wide area.</td>
<td>Pain described as burning, stinging or pricking.</td>
</tr>
<tr>
<td>Duration</td>
<td>Less than 3 months.</td>
<td>More than 3 months.</td>
</tr>
<tr>
<td>Causes</td>
<td>Stimulation of nociceptors in response to inflammation or damage, for example after surgery or a fracture.</td>
<td>Associated with injury or disease of the peripheral or central nervous system, for example post-herpetic neuralgia after shingles or phantom limb pain.</td>
</tr>
<tr>
<td>Management</td>
<td>Multimodal analgesia.</td>
<td>Opioid therapy, for example morphine or oxycodone.</td>
</tr>
<tr>
<td></td>
<td>Poor response to opioids. Consider the use of adjuvants, for example antidepressant or anticonvulsant therapy.</td>
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Box 1: Pain assessment questions

- Where is the pain?
- How strong is it?
- Is it there all the time or does it come and go?
- What does it feel like?
- What makes it worse?
- What makes it better?

to reduce pain to a level acceptable to the patient. Where a dose increase of immediate release opioids is indicated this should not exceed 50% of the previous dose (National Patient Safety Agency 2008). Careful and closely supervised titration is necessary to reduce the risk of opioid-related adverse events. It is good practice to ensure the prophylactic use of laxatives when opioids are initiated to reduce the incidence of opioid-related bowel dysfunction, which includes abdominal pain and constipation.

The basic principles of achieving analgesia are that the oral route is often best as it is less invasive and the regimen should be as simple as possible and use the most efficacious medicines with the fewest adverse effects (Macintyre et al 2010).

Not all types of pain, particularly neuropathic pain, respond to paracetamol, NSAIDs or opioids. Patients with neuropathic pain may be prescribed...
Adjuvant therapy. Adjuvants include anticonvulsants, such as carbamazepine, gabapentin and pregabalin; antidepressants, such as amitriptyline, nortriptyline; N-methyl D-aspartate receptor antagonists, such as ketamine; or topical agents, such as lidocaine plasters and capsaicin cream (Chong et al. 2003). If pain persists an invasive intervention such as a nerve block may be considered by a specialist.

**Unrelieved pain**

The adverse effects of unrelieved pain can be physiological and psychological affecting patients' social functioning, for example work, family and relationships. Therefore moderate and severe pain should be assessed fully and treated appropriately (Macintyre et al. 2010). The physiological responses to pain include increased sympathetic activity resulting in tachycardia, hypertension, and increased myocardial oxygen consumption; reduced lung volumes; reduced gut motility; increased catabolic hormone production (Macintyre and Schug 2007) and an increased risk of pain that persists and becomes chronic. The psychological effects of unrelieved pain include fear and anxiety together with a reduction in sleep, which may negatively affect the patient's recovery (Stannard and Booth 2004).

A combination of pharmacological and non-pharmacological techniques should be used to manage pain. A highly anxious patient may benefit more from speaking about what the pain means to him or her (progression or recurrence of disease) than any benefit gained from the administration of an additional medicine. Patient education, relaxation techniques and actively involving individuals in their pain management programme may be beneficial.

**Role of the pain management service**

The modern multidisciplinary pain team in an acute hospital would cover both acute (postoperative and procedural) and chronic pain (fibromyalgia, lower back pain). These specialist personnel should include an anaesthetist, a nurse, a pharmacist and support from other disciplines such as psychology.

The service has a number of roles including:

- Providing clinical support and expert advice.
- Providing education and training to patients and staff.
- Promoting best practice based on best available evidence.
- Managing patients with complex pain, both acute and chronic.

The majority of pain management nurses will have undertaken a specialist course at postgraduate level or hold a master’s degree in pain management. This specialist role combines the opportunity for further education and to develop research and audit skills, as well as expanding the practitioner’s knowledge of pain management.

**Patient education**

Patients should have an active role in managing their pain. As well as contributing to pain assessment to establish the effectiveness of interventions, patients should also be educated about pain management strategies (Cousins 2009). Carr (2009) identified that a lack of knowledge can result in low expectations of relief from pain, as well as with satisfaction with inadequate relief from pain. Information should be provided in a format that can be understood easily. A booklet that explains how a pain assessment tool is used and the importance of vocalising unrelieved pain is useful.
Conclusion

Pain is a complex phenomenon that requires structured patient assessment to determine the cause and triggers of pain as well as identify any benefits from pain-relieving interventions. The experience of pain involves the interplay between biological, psychological and social factors. A combination of pharmacological and non-pharmacological interventions may be used to manage a patient’s pain. The WHO pain ladder is a useful tool for promoting the appropriate introduction and titration of analgesic medicines that can be used in the cancer setting and beyond. Unrelieved acute pain may contribute to the development of chronic pain and should be treated promptly to minimise the adverse physiological and psychological effects.

Acknowledgement

Each of the articles in this series has been written by a member of the Royal College of Nursing London pain interest group. Nursing Standard would like to thank the author of this article, Felicia Cox, for co-ordinating and developing this series.

FIGURE 2

World Health Organization (1986) pain ladder

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
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<tbody>
<tr>
<td>STEP 1</td>
<td>Non-opioid With or without adjuvant analgesic</td>
</tr>
<tr>
<td>STEP 2</td>
<td>Opioid for mild to moderate pain Plus non-opioid With or without adjuvant analgesic</td>
</tr>
<tr>
<td>STEP 3</td>
<td>Opioid for moderate to severe pain Plus non-opioid With or without adjuvant analgesic</td>
</tr>
</tbody>
</table>

References


