

Management of pain in the terminally ill

Siobhan E King

Joseph Paul Hawkins

Jonathan MJ Valentine

Abstract

Pain management in the terminally ill can be complex and challenging necessitating a holistic approach. Multimodal analgesic strategies are usually employed to successfully manage pain and other symptoms. There are now a variety of opioid formulations available to treat moderate to severe pain. Neuropathic and cancer-induced bone pain can be difficult to treat, but newer drugs are available in addition to a number of established interventional procedures. The psychosocial aspects associated with terminal illness must be considered and managed with the involvement of a multidisciplinary palliative care team.

Keywords Cancer; neuropathic pain; pain; palliative care; terminal illness

Royal College of Anaesthetists CPD Matrix: 3E00, 2E03

Introduction

Specialist palliative care is defined most commonly as providing a service to those patients and their families with moderate to high complexity of palliative care need. Palliative care in itself is an approach that improves the quality of life of patients and their carers when facing life threatening illness; this is achieved through early identification and treatment of suffering, whether pain or other problems. Most commonly pain provides the initial reason for referral and contact with specialist palliative care services.¹

Pain is a universal experience and encompasses every aspect of negative human experience; it is, put simply, the most common expression of something that is not right. Since the description and broad acceptance of the neuromatrix theory of pain transmission,² a holistic approach to pain is recommended for proper assessment and evaluation of therapy. Pain is common in terminal illness, affecting up to 85% of patients with cancer³ and 50% of those with non-malignant terminal disease.

Siobhan E King *MBBCh BSc MRCP FRCA is an ST7 Anaesthetic Trainee at the Norfolk and Norwich University Hospital, Norwich, UK. Conflicts of interest: none declared.*

Joseph Paul Hawkins *BA MRCP FHEA is an ST6 doctor in specialist palliative medicine working at the Priscilla Bacon Lodge, Colman Hospital, Norwich, UK. Conflicts of interest: none declared.*

Jonathan MJ Valentine *MB ChB FRCA FFPMRCA FRCP is a Consultant in Pain Medicine at the Norfolk and Norwich University Hospital, Norwich, UK. Conflicts of interest: none declared.*

Learning objectives

After reading this article, you should be able to:

- define the different mechanisms of pain associated with cancer pain
- describe the principles and practice of opioid prescribing and use of neuropathic agents
- list the interventional options available to treat complex pain
- explain the principles of end of life care planning

Pain is subjective and as such is subject to the filters of consciousness through which all people experience the world and define their sense of self. Patients who are terminally ill have the additional dimension of mortality and often a rapid change in physical deterioration.

Mechanisms of pain

The proposed mechanism for this compounding of pain via routes other than the purely sensory is through the activation of stress, both physical and psychological having a direct influence on the normal homeostasis of stress regulation systems – carrying the potential to create lesions of muscle bone and nerve tissue. In turn these lesions give rise to the chronic and complex pains that often characterize pain in terminal disease. The inclusion of therapies that address the psychological, spiritual, social and cultural factors that may be influencing pain in the terminal patient are therefore essential as part of effective pain management. Spiritual factors regarding questions of self and existential concerns are commonly compounded by social and cultural concerns.

Younger age is a risk factor for complex neuropathic pain and yet prior to the diagnosis of life-limiting disease most patients will have had a prolonged phase of investigation and management that may cover years. In addition, the increasing prevalence of co-morbidities and polypharmacy means that the first initial, clinical, assessment of the palliative patient is essential and can only be properly undertaken with sufficient background knowledge including factors such as previous experiences of family members who may have undergone the same disease process.

In cancer patients, there is more likely to be a combination of nociceptive and neuropathic pain that should be identified during assessment. It is helpful to understand the underlying anatomy, review recent scans, and identify the impact of oncological treatments.

Nociceptive pain

Nociceptive pain arises secondary to direct tissue injury; it is most frequently recognized due to somatic pain felt through injury to bone or soft tissue. The nerve pathways are intact and pain is typically well localized and the cause can be seen, e.g. cellulitis or a fracture on X-ray. It is often described as aching, stabbing, throbbing or pressure.

Visceral pain is a subtype of nociceptive pain that often combines neuropathic elements; possibly due to microscopic nerve involvement by the disease process. In contrast to somatic nociceptive pain, visceral pain is often poorly localized and

results from infiltration, compression or distension of abdominal or thoracic organs. It may be referred to cutaneous sites, which may be tender, e.g. shoulder tip pain due to liver capsular distension causing secondary sub-diaphragmatic pain. It is often described in a similar fashion to somatic pain.

Neuropathic pain

Neuropathic pain is caused by an injury to the peripheral or central nervous system. The underlying mechanisms of neuropathic pain are complex, but broadly speaking pain is either due to an abnormal response of the injured nerve to stimuli or because of spontaneous discharge of the damaged nerve. Typically, peripheral nervous system damage resulting in pain is described as ‘deafferentation’ pain whilst pain arising from the CNS is referred to as ‘central’ pain. Neuropathic pain is generally described as having a different character to nociceptive pain. Patients may describe having a dull ache or burning, tingling shooting or electric shocks. It may be accompanied by changes in cutaneous sensation (see Table 1).

Approaches to management of pain

Once the pain(s) and additional factors have been identified (e.g. depression, anxiety, spiritual distress), the first stage of pain management is often information sharing and education. Few patients will fully understand their pain and this is a common source of additional distress. The nature of neuropathy in particular means that increasing pain may not be associated with worsening underlying disease and this point is important to establish because it is often an unspoken fear for many patients. Complex and potentially fatal drug combinations are commonly used for pain control in terminal patients and spending the time explaining rationale, expected effects and side effects can both empower the patient and improve the efficacy of drug regimens through better compliance and earlier self-identification of side effects.

Neuropathic pain characteristics

Allodynia	Pain caused by a non-painful stimulus
Analgesia	Absence of pain in response to a normally painful stimulus
Causalgia	A syndrome of sustained burning pain, allodynia and hyperpathia after a traumatic injury. Often complicated by vasomotor/autonomic dysregulation and trophic changes to skeletal muscle
Dysaesthesia	An unpleasant abnormal sensation that can be spontaneous or provoked
Hyperaesthesia	Increased sensitivity to stimulation, not necessarily painful
Hyperalgesia	An increased response to a stimulus that is normally painful
Hyperpathia	A syndrome whereby repetitive stimuli create an increased pain response

Adapted from Watson M et al. *Oxford Handbook of Palliative Care*, 2009.⁴ With kind permission.

Table 1

There is a subset of patients for whom increasing titration of analgesics does not improve their pain. This subset may be experiencing pain complicated by ‘wind-up’, a form of neuropathy involving self-reinforcement of pain transduction via the dorsal horn nerves and speculated to involve NMDA-receptor activation. Alternative mechanisms include opioid-induced hyperalgesia and ‘total pain’.

Total pain

Total pain is often manifested as a consequence of spiritual and/or psychological pain in patients who are already experiencing chronic pain and particularly in those who are undergoing deterioration in their physical and social functioning. Referral for spiritual and psychological support is essential. Hay’s model of spiritual assessment⁴ is helpful for identifying patients at risk and is broken down in to:

- Spiritual suffering – interpersonal or intra-psychoic anguish.
- Inner resource deficiency – diminished spiritual capacity.
- Belief system problem – lack or loss of personal meaning system (not necessarily religious).
- Religious request – a specific religious requirement.

Assessment of pain

In order to ensure proper identification of pain and to help demonstrate objective improvement with time it is often helpful to use a method of pain scoring. The key principle to any scoring system relies upon its ease of administration, validity, reliability and sensitivity. Examples include the McGill Pain questionnaire and Brief Pain Inventory. A reduction of approximately one third is considered significant.

Pharmacological options

The creation of the World Health Organization’s (WHO) analgesic ladder for cancer pain has provided a fundamental and easy to follow approach to managing pain. The ladder essentially relies on opioids to underpin it, but these are not always helpful in treating neuropathic pain, so it is important to consider the underlying the mechanism of pain when selecting drugs, and not just the severity. The WHO recommends that analgesia be prescribed regularly ‘by the clock’ and not purely on demand, although there should be provision for managing breakthrough pain.

Oral opioids

Marketing licences and cost can limit the range of opioid drugs available for prescription. Opioids are traditionally described as weak or strong and are labelled as steps II and III opioids, respectively, on the WHO ladder. Step II opioids include codeine and tramadol, which are commonly given in addition to regular paracetamol and where appropriate, non-steroidal anti-inflammatory drug (NSAID), for the management of mild to moderate pain. The 2012 European Association of Palliative Care (EAPC) review states that for these ‘low-potency’ opioids, there is little difference in efficacy between tramadol and codeine combined with paracetamol.⁵ It may be appropriate to consider administering a low dose of a step III opioid, such as morphine or oxycodone at this stage.

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