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Exploring key topics in palliative care: pain and palliative care for older people

Author: Jane Wale[A]

Addressing the palliative care needs of an aging population represents a challenge to all health and social care professionals. A conference was organised by the Royal College of Physicians, in conjunction with the Association of Palliative Medicine, with the aim of improving outcomes for patients who are older, frail or suffering from dementia. Recent advances in the understanding of the genetics, neurobiology, assessment and treatment of pain (Fig 1) were covered during the conference.

The number of older people, particularly those over 80, has increased significantly in recent decades, and centenarians will continue to form the fastest-growing age group in the UK. Consequently, more people are dying following long illnesses and from frailty and multiple morbidities. Palliative care offers a support system that enables patients to live as actively as possible until death. Historically, however, older people have had limited access to palliative care and there is evidence of unmet needs in the treatment of symptoms, the provision of information, and the communication and delivery of older peoples' care preferences.[1]

Providers of palliative care for frail older patients should weigh carefully, in discussion with the patient and their family, the benefits and burdens of treating the primary disease while managing the patient's chronic medical conditions. The assessment and treatment of physical and psychological symptoms or distress is paramount, as is establishing appropriate goals of care and treatment plans in the context of an unpredictable prognosis. Taking such an approach can achieve amazing results, as evidenced by the work of the Care Home Project Team at St Christopher's Hospice, which through a project using the Gold Standards Framework,[2] increased the percentage of people dying in local nursing homes, where they preferred to be cared for. In 2007, 57% of patients in local nursing homes died in this setting, the remainder being transferred to acute hospitals for treatment and end-of-life care. Following the work of the St Christopher's team, by 2012, 78% of nursing home residents achieved their preferred place of death, receiving end-of-life care in their nursing home. Currently, it is estimated that there are around 700,000 people in the UK over the age of 65 years suffering from dementia, and this number is expected to double over the next 30 years. Dementia affects 1 in 5 people over the age of 85 years.[3] The disease trajectory of dementia can be long and unpredictable, and the cognitive and communication difficulties that inevitably arise as this disease progresses underline the importance of the early involvement of palliative care and advance care planning. A recent Delphi study, conducted on behalf of the European Association of Palliative Care, defined the role of palliative care in dementia on the basis of evidence and consensus, and provided a framework that provides guidance for clinical practice, policy and research.[4]

Control of distressing symptoms, including pain, is a key component of palliative care. Pain is common in older adults: 50% of people over the age of 80 years regularly take analgesics. Pain is associated with reduced mobility and disability, weakness and falls and reduced quality of life, and has an impact upon mental health. Musculoskeletal pain is particularly common in older adults, but neuropathic pain secondary to diabetes or stroke can also be problematic. Neuropathic pain is defined as a pain arising as a direct consequence of a lesion or disease affecting the somatosensory system. Pain is more likely to be neuropathic if it is 'burning' or 'electric' in nature, if it is associated with tingling, a 'pins-and-needles' feeling, numbness or itching, if hypoesthesia can be demonstrated or if the pain is increased by brushing the area. Neuropathic pain responds poorly to opiates and NSAIDs; current NICE guidelines for the management of neuropathic pain advocate the use of duloxetine, amitriptyline (or nortriptyline), or gabapentoids as first-line treatment.

The multiple causes of pain are, presumably, just as common in patients with dementia, but it is uncertain whether people with dementia feel pain in the same way as others. There is a lack of evidence about whether pain perception is affected by the neuropathology of dementia; it may cause increased pain tolerance and a blunted autonomic response to low or moderate pain, and this has been demonstrated in animal models. Other research has shown that patients who have dementia have a high symptom burden throughout their disease, often secondary to comorbidities as well as their dementia, with up to 40% thought to be suffering from pain in their final 18 months of life.[5]

Assessing pain in patients with dementia is extremely challenging; self-reporting of pain is limited because of the patient's inability to communicate. Much can be learnt from the response of animals to painful stimuli, and several tools have been developed from animal studies to improve the

Author: [A]consultant in palliative medicine, Milton Keynes NHS Foundation Trust, Milton Keynes, UK

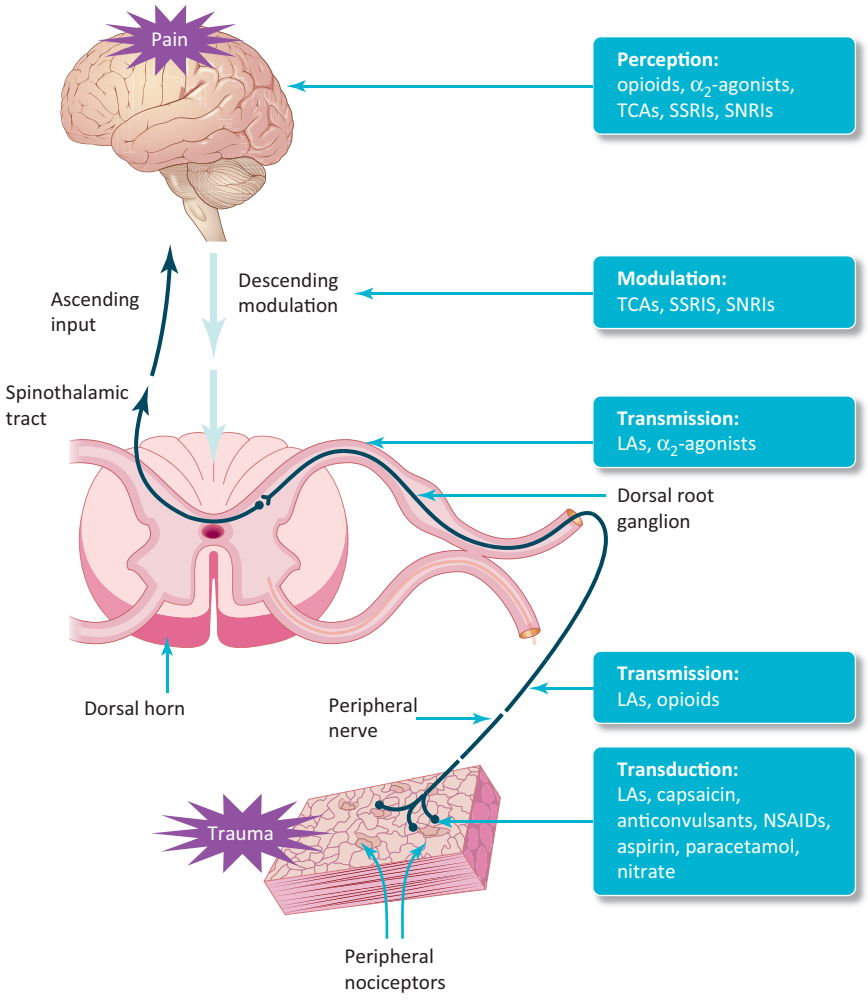

Fig 1. A diagram to illustrate the site of action of different analgesic drugs. LA = local anaesthetic; NSAID = non-steroidal anti-inflammatory drug; SNRI = serotonin–norepinephrine reuptake inhibitor; SSRI = selective serotonin reuptake inhibitor; TCA = tricyclic antidepressant.

assessment of pain, most of which are based on observation of the following six categories:[6]

- facial expression, such as frowning or wincing
- vocalisation, such as groaning or screaming
- body movements, such as freezing or pacing
- changes in interpersonal reactions, such as aggression or withdrawal
- changes in activity patterns or routines, such as changes in appetite or sleep patterns
- signs of change in mental status, such as crying or confusion.

Untreated pain can lead to behavioural symptoms, such as agitation and aggression, prescription of inappropriate drugs, such as antipsychotics, added disability and increased institutionalisation. A recent randomised control trial comparing usual treatment to an individualised daily treatment of pain according to a stepwise protocol, with paracetamol, morphine, buprenorphine transdermal patch or pregabalin, showed that agitation was significantly reduced in the intervention group compared with control group after just 8 weeks.[7] Further research is needed in this patient population; currently, no randomised controlled trials have been published on the effect of treatment of pain *per se* (proxy measures have been used) in patients who have dementia. There is a lack of studies examining the impact of treatment of pain on mood, and all studies in this patient group focus on the use of paracetamol and opioids rather than on evaluating the effect of NSAIDs, anticonvulsants, antidepressants and novel analgesics.

Recent significant advances in research have provided a much greater understanding of the physiology of pain, and it is clear that multiple pathophysiological mechanisms can often be involved in a single patient. The understanding of the role of genetics in pain is developing, specifically in primary erythromelagia, where the genetic mutation causing sodium channel dysfunction has been identified. The response of individuals to pain and analgesia may also have a genetic basis. One of the single nucleotide polymorphisms thought to be associated with sensitivity to pain is catechol-O-methyltransferase (COMT) val^{158}met. COMT is an enzyme that is involved in the breakdown of neurotransmitters after their release in the synaptic cleft. A valine to methionine substitution at position 158 in the polypeptide chain leads to a four-fold decrease in enzyme activity, and research has shown that subjects with this genotype exhibit stronger pain-related functional magnetic resonance imaging (MRI) signals when compared to val^{158}val

subjects.[8] It would seem that people with the met[158]met genotype are worriers rather than warriors, 'feel' pain more and are predisposed to developing chronic pain.

Research using animal models looking into cancer-induced bone pain has improved our understanding of the mechanisms involved. Most skeletal metastases are not painful, but they can cause sudden intense pain that severely limits function. Cancer-induced bone pain results in inflammatory and neuropathic type changes. There is evidence from animal models[9] and clinically, that gabapentin, in addition to opiates and radiotherapy, has a role to play in the treatment of this type of pain.

Nerve injury results in altered signalling between neurones, glial cells and the immune response. An increased understanding of the relationship between these will hopefully identify further humeral factors, ion channels and cell receptors as potential therapeutic targets. The relationship between mood and chronic pain is another area that needs further exploration as depression and pain share the same neurochemical processes and pathways. Drugs such as duloxetine and amitryptline are clearly effective in reducing neuropathic pain, but is that because they are an analgesic or because they enhance mood? Psychoactive drugs such as cannabis are also effective in reducing pain, and there is anecdotal evidence that lysergic acid diethylamide (LSD) and psilocybin from magic mushrooms might be able to interfere with pain pathways. These are, however, unlikely to become analgesics of the future because of the effects of recent Schedule 1 drug laws banning research into these compounds.[10]

To conclude, excellent palliative care is essential for all as treatment goals shift from curing, to managing, to palliating diseases. The palliative care requirements of the older population, and of those with dementia, have been clarified and there are examples of quality-improvement programmes throughout the UK that address these needs. The challenge, at a strategic level, is to enable these pockets of excellence to become standard treatment for all. At an individual level, the assessment and treatment of any symptoms must be tailored to the patient. There is good evidence for, and national guidelines on, the use of current analgesics. It is clear, however, that if the elusive 'perfect' analgesic is to be found, further research is needed into the genetics, neurobiology, assessment, perception and treatment of pain. ■

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Address for correspondence: Dr J Wale, Department of Oncology, Milton Keynes NHS Foundation Trust, Standing Way, Milton Keynes MK6 5LD.
Email: jane.wale@mkhospital.nhs.uk.