

Managing chronic pain in older people

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ABSTRACT

Management of pain in older people should follow the biopsychosocial model, addressing the heterogeneity in their physiological changes, psychological and cognitive aspects, and impact on their social interactions. When deciding on pharmacological treatment, special attention should be given to the side effect profile, drug–drug and drug–disease interactions, as well as route and timing of medication administration. The principle of ‘start low, go slow’ should be followed, and regular reviews of drug effectiveness and tolerability are required. With the adjunct of non-pharmacological interventions, the treatment plan should be tailored to individual needs, with the aim to ameliorate the burden of pain while preserving quality of life.

Introduction

Pain is defined as ‘a distressing experience associated with actual or potential tissue damage with sensory, emotional, cognitive, and social components’.¹ Chronic pain refers to pain that persists for months or years, or relates to chronic health conditions. According to the World Health Organization, musculoskeletal disorders are one of the leading causes of disability among older people.² With ageing, there is a rise in the incidence of chronic health conditions, leading to an increased burden of pain.

Studies have shown that the prevalence of chronic pain in community-dwelling older people ranges from 25–76%. It is higher within residential care settings, ranging from 83–93%.³ The commonest sites of pain are the back, leg (knee or hip) and other joints.³ Consequences of chronic pain among older people are significant. These include depression, anxiety, immobilisation and increased healthcare costs.⁴

Pain management in older people is challenging. Older people represent a heterogeneous population with various degrees of physiological changes. For instance, changes in gastrointestinal functional, hepatic and renal metabolisms can affect drug absorption, bioavailability and drug clearance, etc (Table 1). Changes in brain physiologies also alter pain perception. Studies revealed that, compared with younger individuals, older people had greater sensitivity to pain, in other words a lower pain

threshold.⁵ In addition, sensory and cognitive impairments, cultural beliefs and personal attitudes also create difficulties in pain assessment in the older population. Assessment techniques tailored to individuals’ handicaps and cultural values are needed.⁴

To guide proper management, it is essential to understand the different types and mechanisms of pain. Nociceptive pain refers to pain derived from the stimulation of pain receptors as a result of tissue inflammation or damage. Common examples include inflammatory and degenerative arthritis. Neuropathic pain refers to pain derived from pathologies in the nervous systems. Common examples include post-herpetic neuralgia, trigeminal neuralgia and post-stroke pain. Mixed or unspecified pain refers to pain of uncertain mechanisms, like recurrent headaches. Other conditions may be associated with psychological disorders, requiring psychiatric expertise.⁴

Key points

The commonest sites of pain experienced by older people are the back, leg (knee or hip) and other joints.

Patient report is the most accurate and reliable evidence of pain experience. Choice of pain assessment tools should take account of patients’ cognition function.

Physiological changes with ageing increase older people’s sensitivity to analgesics.

Despite a higher incidence of adverse effects in older people, analgesics can still be safe and effective when comorbidities and concomitant medications are carefully reviewed.

Paracetamol is recommended as the first-line pharmacological treatment, whereas NSAIDs should be used with caution, and given for the shortest course at the lowest effective dose for older people.

KEYWORDS: chronic pain, older people, biopsychosocial model

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Table 1. Relationship between physiological changes with ageing and drug handling^{3,6}

Body physiology	Changes with normal ageing	Clinical consequences
Gastrointestinal tract	<ul style="list-style-type: none"> > Delayed gastric emptying > Reduced peristalsis 	<ul style="list-style-type: none"> > Prolonged effects of continuous-release enteral drugs > Increased risk of side effects including opioid-related bowel dysmotility
Distribution	<ul style="list-style-type: none"> > Decreased body water > Increased fat-to-lean mass ratio > Lower plasma protein concentration 	<ul style="list-style-type: none"> > Reduced distribution of water-soluble drugs > Prolonged half-life of lipid-soluble drugs > Increased free fraction of drugs, leading to higher risk of drug–drug interactions
Hepatic metabolism	<ul style="list-style-type: none"> > Reduced hepatic blood flow and liver mass 	<ul style="list-style-type: none"> > Reduced first-pass metabolism > Decreased oxidation, resulting in prolonged drug half-life
Renal excretion	<ul style="list-style-type: none"> > Reduced renal blood flow, glomerular filtration and tubular secretion 	<ul style="list-style-type: none"> > Reduced renal excretion of drugs and metabolites

Assessment of pain

The aim of pain assessment is to identify the characteristics and impact of pain by appreciating the biopsychosocial model of pain, so as to inform the planning of individualised interventions via a multidisciplinary approach.

Patient report is regarded as the most accurate and reliable evidence of the pain experience. Simple questions and tools can be used to assess patients with mild to cognitive impairment. Supplementary information from caregivers should also be included.⁴

Pain history could be obtained by the OPQRST approach: onset, provoking factors, quality, radiation/region, severity and temporal. Evaluation should include the impact of pain on functional and psychosocial aspects, eg basic and instrumental activities of daily living, sleep, appetite, mood, cognition, attitudes and beliefs, interpersonal relationships, and social activities. Relevant comorbidities and use of medications should be reviewed. The outcomes and side effects of any currently or previously used medications should be addressed. Any drug–drug and drug–disease interactions should be assessed.^{4,6,7}

Various pain scales are available for use in older people, including those with mild to moderate cognitive impairment. These include the numeric rating scale (NRS), verbal descriptor scale (VDS), pain thermometers and face pain scales.^{4,5} For those with severe dementia or who are non-communicable, pain assessment by means of direct observation of any pain behaviours (eg facial expressions, vocalisations, body movements, changes in interpersonal interactions and activities, changes in mental status) or history taking from caregivers should be attempted.⁴

Physical examination should focus on the musculoskeletal and neurological systems. Any signs of arthritis, weakness and sensory changes should be identified.^{4,7} The patient's degree of frailty should also be taken into account.⁷ Appropriate blood tests and imaging should be followed.⁷

Treatment of chronic pain

When considering pharmacological management for older people experiencing pain, the following principles should be adopted. Due to older people's increased sensitivity to drugs, analgesics at lower doses may be required. Nonetheless, a higher incidence of side effects does not justify failure to treat. When older people's comorbidities and concomitant medications are carefully reviewed, analgesics can still be safe and effective. Attention should be given to the timing of medication administration. For example, medications with a rapid onset of action are suitable to treat episodic pain, whereas modified-release formulations are required for continuous pain. The route of medication administration should always be considered. Apart from the oral route, which is convenient and the least invasive, topical preparations may also have favourable outcomes. The rule of 'start low, go slow' should be followed, and combination therapy may have synergistic effects with fewer side effects than a single drug at higher dose.^{3,9}

Paracetamol is recommended as the first-line pharmacological treatment, particularly in musculoskeletal pain, due to its effectiveness and good safety profile.⁶ However, hepatotoxicity is a concern if patients are exposed to prolonged use of the maximum recommended doses or are underweight. In general, patients should not exceed the recommended daily dose of 4 g / 24 h of paracetamol.³

According to National Institute for Health and Care Excellence (NICE) recommendations, oral non-steroidal anti-inflammatory drugs (NSAIDs) or selective COX-2 inhibitors may be considered when paracetamol or topical NSAIDs provide insufficient pain relief for patients with osteoarthritis.⁸ However, due to the side effects, in particular gastrointestinal, renal and cardiovascular adverse effects, and contraindications in older people, NSAIDs should be avoided in managing chronic pain in older people.⁹ If the benefits of using NSAIDs outweigh the risks, the shortest course at the lowest effective dose with regular reviews can be considered.^{3,9} When higher gastrointestinal risks are expected, a proton pump inhibitor (PPI) or misoprostol should be co-administered.³

Opioids should be considered for use in patients with moderate to severe pain, or functional impairment and compromised quality of life as a result of pain.⁶ Potential side effects of opioids in older people include constipation, excessive sedation, delirium, falls and fractures.⁹ Efficacy and tolerability must be regularly reviewed.^{3,9} Examples of opioids include tramadol, morphine, oxycodone, fentanyl, buprenorphine, hydromorphone and methadone. Owing to the unusual pharmacokinetics of methadone, its prescription should be restricted to those with expert experience.^{3,6}

Adjuvant analgesics are recommended for managing older people with neuropathic pain.^{5,6,9} Antidepressants such as tricyclic antidepressants and selective serotonin norepinephrine reuptake inhibitors may offer beneficial effects.⁹ However, a higher risk of adverse effects, like anticholinergic effects and cognitive impairment, in older people using tertiary tricyclic antidepressants may limit their use.⁶ Anti-epileptics should also be used with caution due to potential side effects on the central nervous system.⁹ Therapy should be initiated at the lowest possible dose, followed by slow escalation based on response and side effects. Take gabapentin as an example: the onset of efficacy may take up to 2–3 weeks.⁶

Topical therapies are reasonable alternatives. There have been evolving guidelines recommending topical NSAIDs as first-line therapy in the treatment of osteoarthritis.¹⁰ For localised neuropathic pain, topical lidocaine may offer a second-line treatment.^{6,9} Nonetheless, absorption of transdermal drugs may vary in frail older people with significant subcutaneous tissue loss, thereby creating difficulties in predicting drug efficacy.¹¹

As mentioned, pain is more than a physical sensation. The biopsychosocial model of pain reinforces the influence of psychological factors on patients' response and coping strategies. Psychological interventions like cognitive behavioural therapy (CBT) may be effective as an adjunct to pharmacological therapies.³ Physical activity is important in managing chronic pain in older people; it can help to maintain their independence and quality of life. Reviews of randomised controlled trials recommend programmes that involve strengthening, endurance and flexibility for patients regardless of age.^{3,9} ■

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