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Pharmacological management of chronic non-cancer pain in frail older people

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SUMMARY

Chronic non-cancer pain is a common problem among older people and has a significant impact on their quality of life. Medical comorbidities and polypharmacy are often additional challenges in managing these patients.

Appropriate assessment of chronic non-cancer pain is important for the development of a patient-centred, goal-directed management plan. When assessing patients with cognitive impairment, modified communication strategies and validated pain assessment tools can be useful.

The quantity and quality of the evidence supporting individual drugs in the management of chronic non-cancer pain varies and studies focused on frail older people are limited. Caution is generally advised when introducing drugs and escalating the doses.

Drugs that are not effective should be stopped. A shared decision-making approach is advised for deprescribing analgesics used for chronic non-cancer pain.

Introduction

Chronic non-cancer pain is defined as pain lasting beyond the time of tissue healing or for over three months.[1] It is a significant problem among older people, due to the high prevalence of conditions, such as osteoarthritis, in which pain is a predominant symptom. In Australia, almost one in four older adults aged 65 years and over suffer from chronic pain.[2]

Older people living with chronic pain are more likely to report significant limitation in their daily activities as compared to those without chronic pain.[3] Chronic non-cancer pain can have a negative impact on a person's psychological well-being, and vice versa.[4] However, it is under-recognised, undertreated and often challenging to manage. The presence of frailty in older people adds an extra layer of complexity, given these patients often have several comorbidities treated with multiple medicines and are prone to falls and adverse effects.[5] The relative lack of high-quality studies of using drug therapy in the management of chronic non-cancer pain in frail older people creates gaps in the evidence base which makes management a difficult task.

Assessment

The first step in the successful management of chronic non-cancer pain is recognising the presence of pain and accurately assessing its severity and impact on function, in conjunction with history and examination. Stoicism, and the expectation that pain is part of ageing, have been implicated in the under-reporting of pain in older people.[4] Cognitive and sensory impairments that affect communication can also limit the accurate identification of pain.

The initial assessment needs to identify or exclude serious and treatable causes of pain, before embarking on a symptom management approach. In a holistic assessment it is important to address the psychological and functional impact of chronic non-cancer pain.[4] Multiple functional assessment tools (e.g. SF36, Pain Disability Index) are validated and practical for use in older people. Understanding the impact of the pain can facilitate negotiating realistic and meaningful treatment goals. For example, in some cases improving self-care or mobility to enable the person to participate in certain life activities will be more achievable than complete pain relief.

Assessing pain in mild–moderate cognitive impairment

The current literature shows that even for patients with mild–moderately impaired cognition, self-reporting is still the most reliable and accurate way to obtain the pain history.[6] The Box shows strategies recommended by the UK National Guidelines and the Australian Pain Society for assessing pain in older people.[4]

Assessing pain in severe cognitive impairment

A behavioural-based pain assessment scale can be useful in assessing older people with severe cognitive impairment (Table 1).[4,5,7,8] Most scales are easy to use and only take a few minutes. The Abbey Pain Scale (APS) is widely used and validated for Australian settings. The Pain in Advanced Dementia

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Box Pain assessment in older people[4]

Provide adequate time to discuss their pain, process the question and to formulate a response.

Use open-ended questions when discussing pain, rephrase the questions to elicit the presence of pain, for example:

- Do you hurt anywhere?
- Do you have any aches, soreness or discomfort?
- What is stopping you from doing what you want to do?

Use a self-reported pain measurement tool to assist in evaluation e.g. brief pain inventory.

Arrange for someone who knows the patient well to do the pain assessment and use the same tool and standardised wording during each discussion.

Table 1 Standardised pain assessment tools for older people with cognitive impairment

Standardised pain assessment tool	Format	Comments and references
Tools appropriate for communicative patients		
Brief pain inventory – short form	15-item scale measures both the intensity of pain and impact of pain on the patient's life.	Validated in assessment of chronic non-cancer and cancer pain, available in multiple languages. Appropriate for older people with minimal–mild cognitive impairment.[7]
Numeric Rating Scale (NRS)	10-point scale to quantify pain. Clinician asks: 'On a scale of zero to 10, with zero meaning no pain and 10 meaning the worst pain possible, how much pain do you have now?'	Reliable with high validity in older people with mild–moderate cognitive impairment.[4,8]
Tools appropriate for non-communicative patients		
Abbey Pain Scale (APS)	Six domains of pain-related behaviour are rated on a four-point word descriptor scale (absent to severe): • vocalisation • facial expressions • change in body language • change in behaviour, physiological change, physical changes.	Takes 2–6 minutes to administer. Validated in an Australian residential aged-care setting.[5]
electronic Pain Assessment Tool (ePAT)	A point-of-care smartphone-enabled application that assesses 42 items across 6 domains: face, voice, movement, behaviour, activity and body	Validated against APS in Australian aged-care setting with high sensitivity (96.1%) and specificity (91.4%), with positive predictive value of 97.4% and negative predictive value of 87.6%.[9]
Pain in Advanced Dementia (PAINAD) Scale	Five-item scale assessing: • breathing independent of vocalisation • negative vocalisation • facial expression • body language • consolability. Each item scores 0–2, with higher total scores suggesting a higher probability of pain.	Originally validated in a group of 25 male nursing home residents with severe dementia in the USA. It has high sensitivity (92%) but low specificity (62%) for pain.[4] It was also validated in an Australian study with acceptable utility.[5]
Doloplus-2 Scale	10-item scale that assesses somatic, psychomotor and psychosocial reactions related to pain. Each item scores 0–3 for an overall score up to 30.	

and the Doloplus-2 scale are also recommended based on high reliability and validity.[4] The electronic Pain Assessment Tool (ePAT, or PainChek) adapts automated facial analysis technology to improve recognition of pain in this population and is validated against the APS.[9] It is important to include insights and observations from family members and familiar carers about behaviour that may be pain related. When reassessing the efficacy of pain management, the same scale should be used each time.

Drug treatment

Drugs only form part of a multidimensional management plan for chronic non-cancer pain, in conjunction with other strategies, such as physical exercise and cognitive behavioural therapy.[8,10,11] When a decision is made to prescribe, careful consideration should be taken of the age-related physiological changes and the impact of polypharmacy in older people (Table 2).[12-16] The World Health Organization Analgesic Ladder is still relevant in the management of chronic non-cancer pain, however pharmacological strategies that are effective in acute pain may be less effective in chronic pain. The harm–benefit ratio of pharmacotherapy is frequently higher in frail people, but these patients are often excluded from clinical studies.[17] Current guidelines recommend the following general principles when prescribing for older people:

- start one drug at a time, at a low dose, with slow-dose titration
- allow an adequate time interval to enable the drug to take effect, before introducing additional drugs
- constantly monitor efficacy and adverse effects and adjust or cease the drug if required
- consider deprescribing at regular intervals once self-management of pain is achieved
- review all analgesia, including over-the-counter products, for potential interactions.

The Royal Australian College of General Practitioners aged-care clinical guide (Silver Book) provides practical summaries on polypharmacy, medication management and pain management in older people.[18]

Table 2 **Analgesic dosing considerations in frail older people with chronic non-cancer pain**

Analgesic class	Dosing considerations
Paracetamol	Decreased volume of distribution (20%) and clearance (37%) in frail older people.[13] Harm associated with these changes is uncertain, however some local guidelines recommend reduced doses:[15,16] • 0.5–1 g every four to six hours, up to a maximum of 3 g in 24 hours, if weight >50 kg • 15 mg/kg/dose every four to six hours up to a maximum of four doses in 24 hours, if weight <50 kg. Accidental overdose can occur if taken in combination with over-the-counter products containing paracetamol.
Non-steroidal anti-inflammatory drugs (NSAIDs)	Increased prevalence of chronic renal disease and co-prescription of anticoagulation and antiplatelet therapies in frail older people. Presence of these comorbidities should be considered before prescribing NSAIDs to frail older people. Consider dose reduction and co-administration of proton pump inhibitors if indicated. Accidental overdose can occur if taken in combination with over-the-counter products containing non-steroidal anti-inflammatory drugs. Avoid indometacin and ketorolac because of their higher risk profile.[13]
Adjuvant drugs	Adverse reactions such as sedation and anticholinergic effects limit use. Reduce starting dose and slow up-titration with close monitoring in frail older people and those with renal or hepatic impairment.
Opioids	Increased risk of falls and subsequent fractures, delirium and excessive sedation in older people. Additional risk associated with high-dose use and co-administration with benzodiazepines.

Paracetamol

Although paracetamol is the first-line analgesic, particularly for nociceptive pain, its efficacy is modest. Evidence supporting its long-term use in chronic non-cancer pain is limited, but it remains in multiple guidelines as the first-line drug, especially for older people, given that other options are often contraindicated.[19] Regular paracetamol for up to three months provided mean pain relief of 0.3 points (on a 10-point pain scale, 95% confidence interval −0.6 to −0.1 points) in a systematic review of five trials involving 1686 patients with knee or hip osteoarthritis. Its efficacy in other painful conditions is uncertain.[20]

In view of an increased risk of hepatotoxicity in older adults, sometimes at therapeutic doses,[21,22] and emerging evidence of a relative lack of efficacy of paracetamol, the benefits of long-term use need to be re-evaluated. Co-administration of paracetamol with other analgesics is common, however there is a lack of data on the efficacy of combination therapy in chronic non-cancer pain. A Canadian cohort study highlighted the potential additional risk of gastrointestinal bleeding among older people when paracetamol and non-steroidal anti-inflammatory drugs (NSAIDs) are co-administered as compared to NSAIDs alone.[23] Prescription of paracetamol for a limited duration is recommended with a review of the response to therapy. Discontinue therapy if there is no response.[24,25]

Non-steroidal anti-inflammatory drugs

The gastrointestinal, renal and cardiovascular adverse effects of NSAIDs are well known. Upper gastrointestinal complications occur in 1% of older patients treated for 3–6 months and in 2–4% of those treated for one year. This risk continues with longer durations of use.[13] The efficacy of NSAIDs for knee osteoarthritis diminished and lost clinical significance by eight weeks of therapy.[26] International guideline recommendations do not exclude using NSAIDs in very old people for some musculoskeletal pains with an inflammatory component (e.g. osteoarthritis).[27] The harm and benefit of a short course of therapy should be evaluated carefully and discussed with the patient. Co-administration with a proton pump inhibitor is advised for patients at risk of gastrointestinal complications, such as a history of complicated or uncomplicated ulcers, concomitant use of certain drugs (anticoagulants or antiplatelet drugs, including low-dose aspirin), and the presence of *Helicobacter pylori* infection.[28]

Topical NSAIDs may be a safer alternative for localised pain. They are the preferred treatment for pain associated with osteoarthritis in the hands and knees.[24,25,29] The majority of reports on the safety of topical NSAIDs in older adults are limited by a short period of usage (mostly up to 12 weeks)[30,31] and high drop-out rates secondary to lack of efficacy or localised adverse effects.

Adjuvant drugs

In chronic non-cancer pain with a neuropathic component, there is evidence supporting the use of adjuvant drugs, such as gabapentinoids, tricyclic antidepressants and selective serotonin noradrenaline reuptake inhibitors. These drugs have been recommended as first-line therapy based on a meta-analysis of moderate- to high-quality trials in post-herpetic neuralgia and diabetic neuropathy. The number of patients who needed to be treated for one to benefit (NNT) in the general population was 3.6–7.7 over a period of 12 weeks or less.[32] However, these trials did not specifically involve older people, so caution is advised when prescribing these drugs in frail older patients, and tricyclic antidepressants are not advisable given the high risk of adverse effects.[33]

Topical capsaicin and lidocaine (lignocaine) patches can be considered as second-line drugs for localised neuropathic pain, however their efficacy is limited (NNT = 10.6 for capsaicin 8% patch, undetermined for lidocaine (lignocaine) patch).[32] The associated cost also prohibits ongoing use in some patients.

Opioids

Current guidelines do not support the long-term use of opioids in chronic non-cancer pain. There is a lack of evidence for long-term efficacy, but significant evidence of harm.[10,34] A recent meta-analysis of 30 studies associated opioid use with falls, fall injuries and fractures in older people.[35] Opioids are therefore not recommended other than in exceptional circumstances when other treatments have failed and the pain has been shown to be opioid-responsive.[10] High doses and co-administration with benzodiazepines should particularly be avoided in frail older people given the additional risk of harm.

Data on the use of newer opioids, such as tapentadol, for chronic non-cancer pain are limited. A Cochrane review of four studies in a general adult population showed tapentadol had a relatively small benefit in treating chronic musculoskeletal pain.[36] Data on long-term use in older people are scarce. A sponsored report on the tolerability of sustained-release tapentadol in patients aged 75 years or older showed a more favourable adverse-effect profile than conventional opioids, yet almost a third of patients discontinued by three weeks of usage due to an adverse event, with nausea, constipation, dizziness, and somnolence being the most common.[37] Similarly, the efficacy of buprenorphine in treating chronic non-cancer pain is poor.[38] It is poorly tolerated due to neurological and psychiatric adverse effects in frail older nursing home patients with dementia, especially those using antidepressants.[39] These issues are often not highlighted in clinical trials in which the frail older populations are often excluded.

Deprescribing

Regular review of the drug treatment of chronic non-cancer pain is recommended. Assess the effectiveness of analgesia using the '5As' principle:[10]

- analgesia
- activity
- affect
- adverse effects
- aberrant behaviours, such as unapproved increase of dose or use of the drug to treat other symptoms, or seeking additional prescriptions from other prescribers.

Consider deprescribing if there has been no meaningful improvement in function or pain, when the risk of harm outweighs benefit, or there are aberrant behaviours.[40] Starting a conversation about tapering ineffective drugs with patients can be challenging, especially if they believe the drugs are helpful. Adopt a shared decision-making and tailored approach and involve carers when appropriate.

NPS MedicineWise has developed several resources to assist GPs effectively communicate with patients about managing chronic non-cancer pain.[41,42] While these resources were developed around opioid treatment, the same strategy can be used for deprescribing other analgesics. Written information for patients can also aid the discussion of alternative management strategies.[43,44]

Doses should be reduced slowly in patients who have taken opioids or adjuvant drugs for longer than three months (Table 3).[10,45,46] Consider a faster dose reduction, with specialist input, when deprescribing for intolerable adverse effects or opioid misuse.

Conclusion

Managing chronic non-cancer pain, especially in frail older people, remains challenging. The altered harm versus benefit profiles of drugs in this group of patients need to be carefully considered and regularly reviewed when prescribing. If pain remains troublesome despite standard therapies, consideration should be given to seek support from a geriatrician, pain specialist or pain service. <

Conflicts of interest: none declared

Table 3 **General approach for weaning opioids and gabapentinoids**

Drug class	Duration of use	Weaning schedule
Opioids[10,45]	<3 months, or rapid wean required	Reduce dose by 5–25% every week
	>3 months	Reduce dose by 5–25% every 4 weeks
Gabapentinoids[46]	<3 months	Reduce dose by 25–30% every week
	>3 months	Reduce dose by 25–30% every 2 weeks

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