

Considerations in the Assessment and Management of Older People with Chronic Pain

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Abstract

Introduction: The aim of the paper is to describe the philosophical underpinnings and methodologies in the management of chronic pain in older people. **Methods:** The paper represents a summary of the data concerning the management of pain in older people. These data have been gleaned from various sources, including textbooks, reviews, original papers and conference reports. **Results:** Persistent pain affects approximately 50% of the older population above 65 years. Chronic pain describes a syndrome of persistent pain and accompanying adverse psychosocial consequences and functional disabilities. This is believed to be an inaccurate appraisal of the nociceptive stimulus by the patient. Assessment is based on a multidisciplinary cognitive-behavioural model. Management consisting of a seamless blend of pharmacological, physical and psychological therapies is likely to yield the best results. **Conclusion:** Chronic pain in older people is an emerging problem in the specialty of geriatric medicine. The traditional multidisciplinary approach is likely to give good results.

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Introduction

Persistent pain has been estimated to occur in 50% of community dwelling older people of age 65 years and above.¹ It has been associated with multiple functional and psychological complications. Although we have progressed in our understanding of the pathophysiology of pain in older individuals, there is a lag in our understanding of the management of chronic pain in this age group. This article summarises the data in this field and presents a model for the assessment and management of chronic pain in older people.

Pain – defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.²

Chronic pain – defined as pain persisting beyond the period of normal recovery.³ Traditionally, this has been taken to be 3 months. However, persistent pain need not necessarily lead to psychological, social and functional consequences. In this paper, persistent pain is defined as any pain syndrome that persists beyond the time required for healing and chronic pain is defined as persistent pain that has accompanying physical, psychological and social

consequences. It is in patients with chronic pain that multidisciplinary strategies are required. In persistent pain, the mistake is to “medicalise” their pain and insist on unending investigations and treatments, to the detriment of the development of coping strategies.

Chronic Pain

Chronic pain is a syndrome where there is a persistent nociceptive stimulus, maladaptive cognitions and inappropriate behaviour (both emotional and motor). It has been found that the intensity and frequency of the nociceptive stimulus correlate poorly with mood and level of physical disability. The modern conceptualisation of chronic pain posits that cognitions (appraisal of the situation and beliefs about pain and its treatment) are interposed between stimulus and outcomes. Some beliefs, such as pain due to ongoing damage from disease or activity, that pain will go away only with medical interventions, that the patient himself has no control over the pain, and catastrophic interpretations of the situation, can be particularly damaging. Other beliefs, such as the patient who believes he or she is able to carry out the coping response despite pain, lead to better outcomes. Thus, an approach that targets only the

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nociceptive stimulus may be inadequate.

Epidemiology

Between 25% and 50% of community-dwelling older people 65 years and above have persistent pain.^{4,5} Amongst nursing homes patients, the prevalence is between 27% and 83%.⁶⁻⁹ The prevalence of persistent pain increases with age and peaks at about 65 to 69 years in males and 80 to 84 years in females.⁴

Persistent pain is associated with mood disturbance. Epidemiological data from a community-based sample suggest that depression among people with chronic musculoskeletal pain was 16.4%.¹⁰ The prevalence of anxiety is less well defined. Among pain clinic patients, older patients have less anxiety than their younger counterparts.¹¹ The physical impact from persistent pain alone is difficult to ascertain as the prevalence of other medical comorbidities increase during this period of life. In a recent epidemiological survey among community-dwelling Australians, 54.2% to 63.4% of the sample aged 65 years and above expressed that pain interfered with their daily activities.⁴

The relationship between pain and gender has not been clearly defined in the elderly, although certain conditions occur more commonly in elderly females, such as joint pain, chronic widespread pain and fibromyalgia.¹² Ethnic influences in the prevalence of pain have been studied and do suggest ethnic difference in pain perception and pain reaction, however, this may represent politico-social differences between groups rather than ethnic differences alone.¹³ There is no local data with respect to ethnic differences and it would be premature to conclude that certain races react more dramatically to a painful stimulus especially if politico-social confounders are accounted for.

Common conditions that result in pain in older people are that of degenerative joint and bone disease, such as osteoarthritis and osteoporosis; neurological disorders, such as peripheral neuropathy, post-stroke central pain and post-herpetic neuralgia; cancer pain; angina; and chronic constipation.

Age-related Changes in the Nociceptive System

The trend of psychophysical studies suggests that the sum of physiological changes in older persons results in them having higher pain thresholds, but lower pain tolerance.¹⁴ The pain threshold is the level of stimulus intensity (mechanical, thermal, chemical or electrical) that the subject first perceives as being noxious. Pain tolerance is the maximal amount of a stimulus that a subject can tolerate.

In the peripheral nervous system, there is impairment of A-delta nerve function in the elderly.¹⁵ A-delta neural

function is essential for the transmission of the initial pain to a thermal stimulus (the sharp sting of a hot object). In the elderly, noxious stimuli delivered at lower frequencies (such as 0.2 Hz) are capable of showing the phenomenon of temporal summation, meaning that on the 5th repeated stimulus, the 5th noxious stimulus is rated to be more painful when compared to the first stimulus.¹⁶ This phenomenon only occurs in the young at higher frequencies. This suggests that there is some important age-related change in the plasticity of the spinal cord which, at present, has not been identified. Washington et al¹⁷ also demonstrated that, after a prolonged noxious stimulation, the endogenous pain modulation mechanisms in the older person are not activated to the same degree as the younger person; but the precise mechanism, and hence our ability to modify it, has not yet been identified.

Making clinical deductions from this information may, at present, be premature. However, the experimental data suggest that damage is perceived only by the older person when it is more severe. Pain may also not be as effectively “dampened” by the body’s endogenous pain modulating systems. When it is perceived, it rapidly becomes intolerable in the elderly. Repeated acute pain stimuli, or continued peripheral noxious input from injury or inflammation, may have greater potential to cause more widespread and severe chronic pain in the elderly than in the younger adult.

Assessment

The ageing process is associated with multiple social, personal and health-related losses. Persistent pain may be only one of the factors that is affecting the well-being of the patient. Establishing how persistent pain affects the overall “quality of life” is important in treatment planning. This necessitates a multidisciplinary approach. In practice, the skills of a doctor, psychologist and physiotherapist are complementary in carrying this out. A nurse clinician, occupational therapist and pharmacist may often contribute other aspects of the assessment. The total time commitment in a complex patient may be up to 3 hours.¹⁸

Domains of Assessment

The assessment of chronic pain in the older person is similar to that in the younger person¹⁹ and should encompass:

1. The medical aspect: what is the pathological process that resulted in the present pain syndrome and are there other pathologies maintaining the pain? How many medical comorbidities are there and do any of them affect the management of pain? Are there features to suggest a sinister pathology has been missed? Is polypharmacy an issue complicating the management of the pain problem?
2. The functional aspect: what functional implications are

there for the patient because of the pain? This may be in terms of activities of daily living, instrumental activities of daily living and effects on discretionary and vocational activities.

3. The social aspect: what impact does the pain have on social relationships and are aspects of the relationship maintaining the chronic pain syndrome?
4. The cognitive aspect: what are the patient's beliefs about the cause, prognosis and treatment options of the pain? How are these interacting with their pain?
5. The affective aspect: is the pain associated with depression, anxiety or anger?

The Medical/Physical Assessment

A thorough medical history should include information on the duration, site and radiation, severity, character and temporal characteristics of the pain. There may frequently be more than one site of pain and a pain diagram may give a better representation of the type of pain. The physical assessment should focus not only on the site of pathology, but also the posture, gait, and ability to perform everyday activities and the quality of the performance. The ability to perform an activity repeatedly should also be measured, such as the walking distance or time, as this is a better way to document disability. The absolute inability to perform a particular activity is rare in chronic pain. Range of movement and myofascial trigger points should also be identified in the examination.^{20,21}

The severity of the pain should be captured and monitored using some form of pain scale (Fig. 1).²² Examples of these include the numerical rating scale, visual analogue scale, verbal rating scales and pain relief scale. A vertical orientated verbal descriptor scale in the form of a pain thermometer is possibly superior to a horizontal scale.²³ Pictorial pain scales have not been shown to be superior to other more

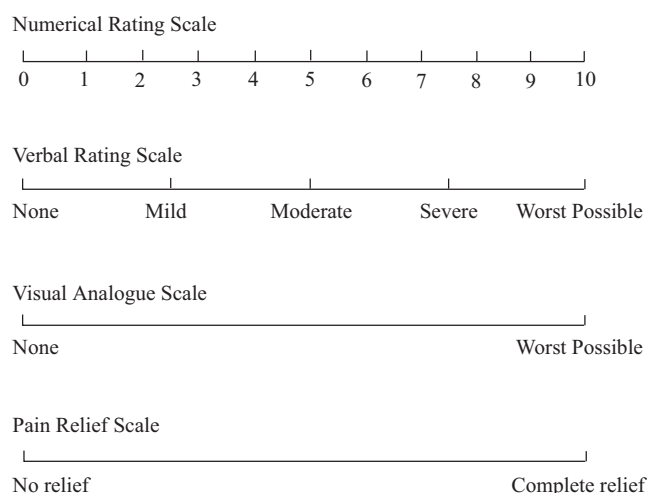


Fig. 1. Examples of commonly used pain intensity scales.

simple scales in both cognitively intact and impaired groups. The intensity of colour has also been used to rate the intensity of pain. The authors' preference is for the Gracely Box Scale (GBS, Fig. 2) as it combines a numerical rating scale, a verbal rating scale and a vertical orientation, although its efficacy in older people has not been formally documented.²⁴ The verbal rating intervals on the GBS have been validated psychophysically in young adults.

If the exact pathology cannot be accurately ascertained, it should not be relentlessly pursued if there are no features to suggest a dangerous pathology or a correctable pathology. "Red flags" indicative of severe underlying disease include weight loss, chronic ill health and presence of other systemic illness such as malignancy, progressive neurological deficit, progressively worsening pain and increased intensity of pain at rest. In instances where there is good correlation between the clinical findings and radiological studies, operative interventions should be suggested and age should not be taken as an excuse to withhold beneficial surgical management.

Another caveat operative in chronic pain is that functional and clinical severity may not correlate with the severity of pathology on imaging. This applies to radiographic assessment of osteoarthritis of the knees²⁵ and magnetic resonance imaging of lumbar back pain.²⁶ Lumbar spondylosis and vertebral canal stenosis are common findings in the aged spine and should not form the principal diagnosis if the clinical assessment does not correlate.

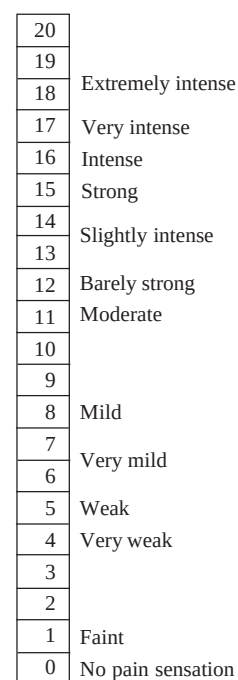


Fig. 2. Gracely Box Scale for measuring pain intensity and unpleasantness.

Advancing age is associated with an increased likelihood of multiple medical comorbidities. The number of medical comorbidities has been shown to affect outcome.²⁷ Drug-illness interactions are also important considerations. Comorbidities affect the choice of medications available to the patient. Some medications can also exacerbate certain geriatric syndromes. Opioids can increase delirium or somnolence. Tricyclic antidepressants can worsen obstruction-related lower urinary tract symptoms.

The Psychological Assessment

The psychological assessment should take into account affect, pain-related cognitions and pain-related behaviours.²⁸

The assessment of depression and anxiety in chronic pain can be difficult as chronic pain is associated with some of the somatic features of depression and anxiety, such as sleep disturbance, anorexia and features of autonomic activation. Establishing the temporal relationship between the pain problem and the mood disorder is important. Treating a primary affective disorder requires a different approach.

Adaptive and maladaptive pain-related cognitions, in the form of beliefs, thoughts and appraisals, must be identified. These may relate to the meaning of the illness, the types of treatment that are available, the amount of control one has over pain and the type of strategies that one can use to cope with pain. Some cognitive factors that can lead to poor outcomes²⁹ include beliefs that pain represents ongoing damage, that only medications or operations will resolve the pain, that the patient must rest till the pain resolves, that passive strategies (massage, traction, heat) are better, that others (doctors, God) have control over their pain and catastrophising.

Cognitive factors that can lead to better outcomes²⁹ include high self-efficacy (a person's appraisal of his ability to perform a certain coping behaviour), a belief that active strategies (relaxation, exercise) are better and that the patient himself or herself is able to control his or her own pain. The first and last factors represent an internal locus of control as opposed to an external locus, which is generally maladaptive.

Pain-associated behaviours not only include expressions of pain but also avoidance of activities. This may include pain-related fear of movement (kinesiophobia) and avoiding certain everyday activities.³⁰ Cutting down on the frequency or intensity of activities may also represent a form of avoidance.

The Social Assessment

Excessive solicitous behaviour by relatives can result in a worsening of chronic pain.³¹ For example, if the spouse insists on doing all the activities for the patient, it would

promote deconditioning in the patient and lead to musculoskeletal pain. An expectation of solicitous behaviour on the part of the patient can also result in inter-social conflicts.

Caring for a patient with chronic pain also requires an understanding of the resources available in the environment in which the patient lives. This is similar to assessment in the context of any other geriatric syndrome.

Assessment of Pain in Dementia

Assessment of pain in the presence of cognitive impairment is unique to older people. Recall of pain episodes is problematic and multiple observations may be required for accurate and reliable diagnosis.

The problem of severity assessment can be viewed from 2 perspectives. For patients who are communicative, the scales listed above are still relevant. It has not been ascertained as to which scale is the most appropriate. However, it appears that validity increases with the number of scales used.^{32,33} In non-communicative patients, observer interpretation of pain behaviour is used. Some features include facial expressions, such as grimacing, vocalisations, guarding or protective posturing and change in motor activity.³⁴ In most studies, patient behaviour has been observed in situations of acute pain, such as venepuncture and mobilisation. The validity and reliability of these observations do not necessarily apply in situations of chronic pain.

Management Strategies

The General Treatment Strategy

Treatment should be comprehensive. The aim is to promote self-management by the patient, in active, empirical collaboration with the healthcare team. The focus is, however, on maintenance of functional independence.

For convenience, we have divided the management into individual modalities, although frequently the management programme is multifaceted from the beginning.

Psychological Modalities of Management

Most modern chronic pain management programmes are based on the cognitive behavioural therapy (CBT) model.³⁵ Such programmes consist of patient and family education, contingency management, relaxation training, training in goal setting and problem-solving skills, training in effective communication, behavioural reactivation and cognitive restructuring.³⁵

The efficacy of CBT in the general population has been reviewed by Morley et al,³⁶ who showed that such techniques have an unequivocal benefit. However, there have been limited studies in older people. Cook³⁷ did demonstrate that 10 weekly sessions of CBT were effective in the

institutionalised elderly. Puder³⁸ has also shown that age was not a factor in determining the success of a CBT programme. CBT is also useful in the treatment of depression in the elderly.³⁹

Pharmacological Management

There is limited data regarding the pharmacological treatment of persistent pain in the elderly. Principles are extrapolated from data available in the young and patients with malignant pain. Treatment may be pain-contingent, time-contingent or prophylactic, depending on the circumstances.

Non-opioid analgesia: Paracetamol remains the first-line treatment for any chronic non-malignant pain.⁴⁰ Its efficacy is not significantly different to ibuprofen. It is a relatively safe drug, although hepatic failure has been reported after prolonged usage at high doses in malnourished patients and alcoholics.⁴¹

Prolonged use of non-steroidal anti-inflammatory drugs (NSAIDs) should be avoided.⁴¹ They should be reserved for use in transient or subacute musculoskeletal pain, which is thought to be inflammatory. Care must be taken when used in the elderly, as age itself increases the risk of gastrointestinal bleeding when unselective cyclo-oxygenase (COX) inhibitors are used. No difference in efficacy has been demonstrated between the various groups of NSAIDs when comparisons are made between groups of subjects. However, individual patients may respond better to one group than to another. The reason has not been elucidated.

The COX-II specific inhibitors have been touted as the panacea for NSAID-related complications. Although they have been demonstrated to have lower gastrointestinal complications at 6 months, they do have renal and cardiovascular complications⁴² and may not be more beneficial after 12 months. The treating clinician should be mindful of their limitations when using them in the multimorbid elderly.

Opioid analgesia: Opioids have been shown to be safe in the treatment of malignant pain in the elderly. In chronic, non-malignant neuropathic or nociceptive pain, they can be used on a long-term basis.⁴³ Care is needed with dosing, necessitating commencement at a low dose, increasing slowly whilst being vigilant for any side effects. Prophylactic treatment of constipation is nearly always required. Their use in non-malignant pain raises other issues. Maier et al⁴³ demonstrated that only approximately one-third of patients responded well to opioid analgesia, one-third respond partially and one-third did not respond; of the responders, only half continued to benefit in the long term. This compares poorly with their use in malignant pain, where 90% of patients will have opioid-responsive pain. The risk-benefit ratio in older patients is currently unknown as

they respond to lower doses of opioids where less side effects are expected, but have a greater tendency towards adverse effects.

Adjuvant analgesics: Commonly used agents for neuropathic pain include tricyclic antidepressants and anti-epileptic drugs. Some anti-arrhythmics are used too, but they generally have low therapeutic windows in older people and shall not be discussed here.

Amitriptyline remains the most commonly used antidepressant for neuropathic pain. No other drug has been shown to be superior to amitriptyline.⁴⁴ It can be used for any form of neuropathic pain, although its efficacy is probably limited in neuropathic pain from cerebral or spinal cord injuries. As with any other medication used in older people, the clinician is advised to start low and go slow.

The best-studied anti-epileptic drug at present is gabapentin. It has been proven to be useful in the management of post-herpetic neuralgia⁴⁵ and diabetic neuropathy,⁴⁶ but its use in other syndromes is by extrapolation. It can produce somnolence, giddiness and ataxia in the elderly at therapeutic doses, which can result in falls.

Other pharmacological measures: Antidepressants and anxiolytics should be considered in patients where the mood disorder precludes the use of cognitive behavioural therapy and physical measures for the management of the pain. However it should be used in the context of a multidisciplinary management programme rather than as a sole modality of treatment, unless the disorder is primarily affective in nature.

Physical Modalities of Management

Goal contingent exercise therapy has been used as a part of CBT programmes and it is most effective in that context. Exercise therapy should include stretching, strengthening and aerobic exercise. Modification of the diet to promote weight loss can help in painful conditions involving the weight-bearing joints. Other techniques, such as trigger point deactivation, massage therapy, acupuncture, transcutaneous electrical stimulation, heat and cold, have also been used. However, the clinician should be aware of the dangers of an over-reliance on passive therapies especially if the patient tends to have an external locus of control. Advice on simple manoeuvres for lifting and walking may be of great functional benefit. A good example is leaning on the supermarket trolley in patients with vertebral canal stenosis. Hydrotherapy and use of an exercise bike may promote range of movement and confidence.

The use of assistive devices, such as walking sticks, can be useful in patients to improve function and reduce pain. However, such measures should be applied judiciously so as not to promote over-reliance nor to promote deconditioning.

Management of the Social Circumstances

The patient's families must be educated about the nature of chronic pain. Firstly, they must be assured that the problem is real and the patient is not in anyway trying to "fake the pain." Secondly, they must be educated that the aim is not only to decrease pain but also to maintain function. The nature of how solicitous behaviour can modify patient's function should be explained to the carer. The family should also be educated about the need to maintain a certain level of physical activity. Thirdly, the patient should be instructed in proper ways to behave when he is in pain. Fourthly, the family and the patient should be taught method of non-pharmacological pain management and also taught about how they can safely modify their treatment regimes when there is increased pain. Such measures may increase the family's and the patient's sense of mastery.

Frequently, loneliness and meaninglessness can present as somatic complaints, including pain. Pain management in these instances may be helping the patient source for social or meaningful activities to fill his or her time.

Procedural Modalities of Management

In certain instances, the chronic pain syndrome may remain a burden for the patient despite good multidisciplinary care. If the clinical assessment correlates well with the radiological pathology, there may be a role for either anaesthesiological procedures or surgical procedures. Such procedures should not be excessively delayed as the patient may become excessively deconditioned or be denied these procedures because of age.

A case in point would be the use of arthroplasties. Successful knee arthroplasties can result in a significant reduction in the severity of the pain. In a series, moderate pain occurred only in approximately 30% of patients 7 years after a knee arthroplasty.⁴⁷ Knee arthroplasty can also result in improvement of function.⁴⁸ It has also been shown that carefully selected patients above 80 years of age can safely undergo either a hip or knee arthroplasty with benefits similar to an age-matched group.⁴⁹

In terms of anaesthesiological procedures, this should be discussed and co-managed with an anaesthetist. However, such procedures are usually transient in their benefit and serve as an adjunct to facilitate functional restoration procedures.

Conclusion

Chronic pain is a multidimensional syndrome which requires multidimensional assessment and intervention. Although there is currently a dearth of information about the management of chronic pain in the literature, this will

likely be rectified in the coming years as chronic pain is increasingly recognised as an important geriatric syndrome.

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