

Chronic Pain Management in Geriatric Patients

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Introduction

Pain is a common etiology among older Americans, affecting more than 33 million people aged 65 years or older.¹ Furthermore, studies indicate that 45 to 80% of nursing home residents have pain and that 25% to 50% of community-dwelling residents suffer significant pain problems.²⁻⁵ These results clearly indicate that geriatric patients continue to be undertreated and underdiagnosed for their pain.

Definition

Pain is an unpleasant sensory and emotional experience.⁶ It is recognized as a complex phenomenon derived from sensory stimuli and modified by individual memory, expectations and emotions.⁷ Unfortunately, there are no objective biological markers of pain. Therefore, the most accurate evidence of pain and its intensity is based on the patient's description and self-report.⁸

Acute pain can be defined as that which is caused by noxious stimulation due to injury, a disease process, or abnormal function of muscle or viscera.⁹ This type of pain is typically associated with a neuroendocrine stress that is proportional to intensity.

Chronic pain is defined as an individual's unpleasant sensory or emotional experience that is recurrent or persistent.¹⁰ American Geriatrics Society defines persistent pain as a painful experience that continues for a prolonged period of time.¹¹

Incidence of Chronic Pain in Geriatric Patients

One in five older Americans (18%) are taking analgesic medications regularly (several times a week or more), and 63% of these had taken prescription pain medications for more than 6 months.¹²

Forty five percent of patients who take pain medications regularly had seen three or more doctors for pain in the past 5 years.

Older patients often have multiple medical problems. A high prevalence of dementia, sensory impairments and disability in this population make assessment and management difficult. No such data are available regarding chronic pain in geriatric patients in India.

Barriers to chronic pain management in geriatric patients

Barriers to pain management in geriatric patients can be of the internal or external nature.

Internal barriers¹³

- A punishment for past actions,
- An inevitable part of aging that is unavoidable,
- Indicative that death is near, or
- The detection of a serious illness.

External barriers^{14, 15}

• *Inadequate assessment of the patient's pain:* This may be due to the lack of knowledge of the recommendations offered by professional healthcare organizations in treating geriatric pain. It may also be due to unfamiliarity with validated pain assessment scales and other tools.

• *Comorbid conditions that can complicate a clinical presentation:*

Often, geriatric patients present with multiple disease states that can interfere with both the assessment and efficacy monitoring of a pain

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management regimen.

- *Reluctance on the part of the healthcare professional and patient to use opioid medications for fear of possible addiction.*

- *Dearth of healthcare professionals trained in geriatrics or pain management.*

- *Assumptions by a healthcare professional that the perception of pain is a part of the normal aging process and that a complaint of pain may be used to get attention.*

- *Altered pharmacodynamic and pharmacokinetic properties of the geriatric population.*

- *Altered mental status in the presence of such disease states as Alzheimer's disease and other types of dementia.*

Consequences of chronic pain

The consequences of chronic pain among older people are numerous. Depression, decreased socialization, sleeps disturbance, impaired ambulation, and increased healthcare utilization and costs.^{2, 3, 16-19}

Classification of Chronic Pain

1. Nociceptive pain

Arthropathies (e.g. rheumatoid arthritis, osteoarthritis, gout, posttraumatic arthropathies, mechanical neck and back syndromes)

Myalgia (e.g. myofascial pain syndromes)

Skin and mucosal ulcerations

Nonarticular inflammatory disorders (e.g. polymyalgia rheumatica)

Ischemic disorders

Visceral pain (pain of internal organs and viscera)

2. Neuropathic pain

Postherpetic neuralgia

Trigeminal neuralgia

Painful diabetic polyneuropathy

Post-stroke pain (central pain)

Postamputation pain

Myelopathic or radiculopathic pain (e.g. spinal stenosis, arachnoiditis, root sleeve fibrosis)

Atypical facial pain

Causalgia-like syndromes (complex regional pain syndromes)

3. Mixed or undetermined pathophysiology

Chronic recurrent headaches (e.g. tension headaches, migraine headaches, mixed headaches)

Vasculopathic pain syndromes (e.g. painful vasculitis)

4. Psychologically based pain syndromes

Somatization disorders

Hysterical reactions

Nociceptive pain may be visceral or somatic and is most often derived from stimulation of pain receptors.²⁰ Nociceptive pain may arise from tissue inflammation, mechanical deformation, ongoing injury, or destruction and usually respond well to traditional approaches to pain management, including common analgesic medications and nonpharmacologic strategies.

Neuropathic pain results from a pathophysiologic process that involves the peripheral or central nervous system.²¹ These pain syndromes do not respond as predictably as nociceptive pain problems to conventional analgesic therapy. However, they have been noted to respond to unconventional analgesic drugs such as tricyclic antidepressants, anticonvulsants, or antiarrhythmic drugs.²²

Mixed or unspecified pain is often regarded as having mixed or unknown mechanisms.

Treatment of these syndromes may require various trials of different or combined approaches. When psychological factors are judged to have a major role in the onset, severity, exacerbation, or persistence of pain, this is described as psychogenic pain. Patients with these disorders may benefit from specific psychiatric treatments.

Assessment of chronic pain in geriatric patient

A multidisciplinary assessment and treatment strategy is often indicated.²³ A thorough initial assessment is crucial to understanding the causes and pathophysiology of chronic pain in the older adult.²⁴ Pain management is most successful when the underlying cause of pain is identified and treated definitively.

GERIATRIC PAIN ASSESSMENT

Date: _____ Medical Record Number _____

Patient's Name _____

Problem List:

Medications:

Pain Description:

Pattern: Constant Intermittant Pain Intensity:
Duration: _____ 0 1 2 3 4 5 6 7 8 9 10
Location: _____ None Moderate Severe

Character:
Lancinating Burning Stinging
Radiating Shooting Tingling
Worst Pain in Last 24 hours:
0 1 2 3 4 5 6 7 8 9 10
None Moderate Severe

Other Descriptors: _____ Mood: _____

Depression Screening Score: _____

Exacerbating Factors: _____ Gait and Balance Score: _____
_____ Impaired Activities: _____

Relieving Factors: _____ Sleep Quality: _____
_____ Bowel Habits: _____

Other Assessments or Comments: _____

Most Likely Cause of Pain: _____

Plans: _____

(Figure-1)

Comprehensive pain assessment should include :

A. Medical history

The present pain complaint should include characteristics such as intensity, character, frequency or pattern (or both), location, duration and precipitating and relieving factors.

B. Medication history

A thorough analgesic medication history, including current and previously used prescription medications, over the counter medications, and "natural" remedies.

C. Physical examination

Physical examination with particular focus on the neuromuscular system e.g. search for neurologic impairments, weakness, hyperalgesia, hyperpathia, allodynia, numbness, paresthesia and the musculoskeletal system e.g. palpation for tenderness, inflammation, deformity, trigger points.

D. Physical function

A focus on pain-associated disabilities, including activities of daily living and performance measures of function e.g. range of motion, Up-and-Go Test.

E. Psychosocial function

This includes assessment of the patient's mood, especially for depression and assessment of the patient's social networks, including any dysfunctional relationships.

F. Quantitative assessment of pain (Fig.2 & Table-3)

Pain should be recorded by the use of a standard pain scale eg., unidirectional scales such as visual analogue scale(VAS), verbal descriptor scale(VDS), numerical rating scale(NRS).²⁵

More comprehensive approaches to pain assessment with multidimensional measures also exist. Melzack has created a simplified version of the McGill Pain Questionnaire (MPQ) known as the SF-MPQ, which was found to be usable in older individuals. It includes descriptors representing sensory and affective components of pain. It also has measures to evaluate pain intensity such as the VAS and VDS (also known as the Present-Pain Inventory).

Patients with cognitive or language barriers should be presented with scales that are tailored for their needs and disabilities (e.g. scales adapted for speakers of a foreign language, scales in large print, or scales for the visually impaired that do not require visual-spatial skills).

G. Maintenance of diary

Patients with chronic pain and their caregivers should be instructed to use a pain diary with regular entries for pain intensity, medication use, response to treatment and associated activities.

H. Reassessment

Patients with chronic pain should be reassessed regularly for improvement, deterioration, or complications attributable to treatment.

- It should include evaluation of significant issues identified in the initial evaluation.
- The same quantitative assessment scales should be used for follow-up assessments.
- It should include an evaluation of analgesic medication use, side effects, and adherence problems.
- It should include an evaluation of the positive and negative effects of any nonpharmacologic treatments.

Treatment strategies of pain management in geriatric patients

The American Geriatrics Society has published position papers on the care of patients near the end of life.^{26, 27} Clinical practice guidelines have been published by the Agency for Health Care Policy and Research to address the management of acute and postoperative pain, the management of cancer pain, and the management of acute back pain.²⁸⁻²⁹ Guidelines have also been published by the American Pain Society on analgesic medication for acute pain and cancer pain.³⁰ We can divide it into two headings:

A. Pharmacological treatment

The most common strategy for pain management is the use of analgesic drugs.³¹ Although older people are more likely to experience the side effects of analgesic medications, they also appear to be more sensitive to analgesic properties, especially those of opioid analgesics.

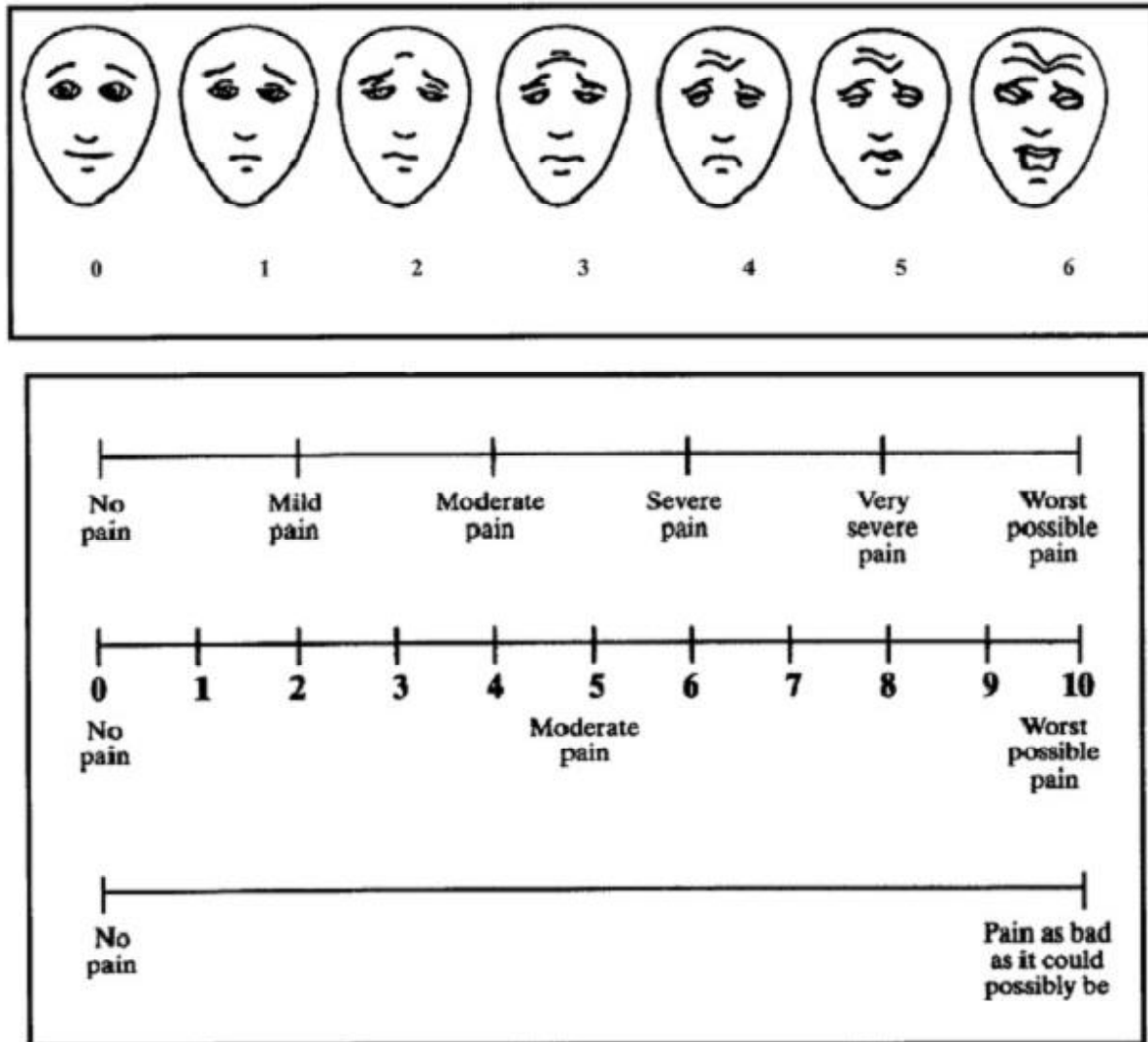


Figure-2 Examples of pain intensity scales for use with older patients. 1.A faces scales. 2.Visual analogue scale.

0. No pain 1. Mild pain 2. Uncomfortable 3. Distressing 4. Horrible 5. Excruciating

Present Pain Inventory (PPI)

General principles

A. A little goes a long way

Since hepatic and renal functions are often reduced as a normal part of aging, elderly patients may achieve pain relief from smaller doses of analgesics than those required by younger patients. Therefore, always start with one half to one third of usual adult dose and increase slowly. Extra precautions should be taken with long acting analgesics. The adage “start low

and go slow” is probably appropriate for most drugs known to have high side effect profiles in the older adult.^{32, 33}

B. Use standing doses

Always avoid relying on prn doses. If the pain is experienced at predictable times in the routine of their day, standing doses of analgesics should be used to prevent pain. If the pain is steady and continuous, analgesics should be used round the clock.

C. Be compulsive about assessing pain and side effects

Because we are working with a frailer population in whom drug accumulation occurs easily and adverse effects are more common and more devastating (eg. confusion, aspiration, falls), therefore reassessment of pain relief and side effects should be performed within hours to days and change the drug, dose or timing of the medication.

D. Involve the caregivers

Always educate and include the primary caregivers in the treatment plans. This includes clear, written instructions about pain assessment and potential side effects. Without their full understanding and cooperation, it is not uncommon for bad experiences to cause the patient or their family to fear the drug and lead to noncompliance and needless suffering later on.

The World Health Organization has published guidelines on how to use a stepwise approach to pain management. An international panel of experts in the field of pain management have defined best practice standards that have been widely accepted and utilized throughout the world today. The 3 steps are defined as follows:

Step 1: Unless contraindicated, aspirin, acetaminophen, or other nonsteroidal anti-inflammatory drugs (NSAIDs) should be used for mild to moderate pain. This includes both older and cyclooxygenase-2 (COX-2) selective medications.

Step 2: If the pain becomes more intense or persists, then an opioid appropriate for mild to moderate pain may be added to the current pain management regimen.

Step 3: When the pain continues to become more intense and is deemed to be in the range of moderate to severe, the opioid may be increased or changed to a more potent opioid. Conversely, nonopioid or adjunctive therapy may be added, which includes (but is not limited to) the use of antidepressants, anticonvulsants, and steroids.

Acetaminophen: It is first-line agent, unless contraindicated, in the range of 2 to 4 g/day. Dosages greater than 4 g/day can result in development of irreversible hepatic necrosis.³⁴

NSAIDs: Aspirin 4000mg/day, ibuprofen 2400mg/

day, naproxen 1000mg/day, choline magnesium trisalicylate 5500mg/day, in maximum dosages can be given. Chronic use of indomethacin, piroxicam, tolmetin, and meclofenamate is not recommended due to the incidence of more severe adverse side effects in geriatric patients associated with these agents.³⁵⁻³⁷ Another concern with the use of traditional NSAIDs is their incidence of adverse reactions, and in particular, the risk of gastrointestinal bleeds, which can be life-threatening. For those aged 60 or older, the risk reaches 3 to 4%, and for those with a history of gastrointestinal bleeding, the risk is about 9%.³⁸ The concomitant administration of misoprostol, histamine2-receptor antagonists, proton pump inhibitors, and antacids is only partially successful in reducing the risk of gastrointestinal bleeding associated with NSAID use.³⁹⁻⁴¹

Other adverse events noted with the NSAIDs include increase in blood pressure, edema, renal impairment, and increased risk of a drug to drug interaction.³⁴

NSAIDs should be used with caution:

- High-dose, long-term NSAID use should be avoided.
- When used chronically, NSAIDs should be used as needed, rather than daily or round the clock.
- Short-acting NSAIDs may be preferable to avoid dose accumulation.
- NSAIDs should be avoided in patients with abnormal renal function, with history of peptic ulcer disease and with bleeding diathesis.
- The use of more than one NSAID at a time should be avoided.
- Ceiling dose limitations should be anticipated (i.e., maximum dose may be unattainable because of toxicity or may be accompanied by lack of efficacy).
- Maximum recommended dose should not be exceeded to minimize toxicity of acetaminophen or NSAID.

COX-2 inhibitors: several selective COX-2 medications have become available in the market, including celecoxib, rofecoxib, and valdecoxib. Their selectivity for COX-2 has demonstrated a significant

benefit in reducing the incidence of gastrointestinal irritation and side effects. The safety of COX-2 inhibitors compared with traditional NSAIDs in the area of gastrointestinal hemorrhage was studied and reported in the British Medical Journal.⁴²

It is also important to be aware that distinct differences in the side-effect profile can be found between the various COX-2 selective agents. It was concluded that rofecoxib 25mg/day resulted in a statistically significant higher incidence of edema and mean systolic change in blood pressure than celecoxib 200 mg/day in hypertensive patients.⁴³

Opioids: The use of opioid drugs for chronic non cancer related pain remains controversial, but they are probably underutilized in the treatment of older people.³² Fears of drug dependency and addiction do not justify the failure to relieve pain, especially for those near the end of life. Some state agencies have released prescribing guidelines for the appropriate use of narcotic analgesic drugs for chronic non cancer related pain.^{44,45}

The doses of opioid analgesic medications needed for the treatment of non cancer related chronic pain are often smaller than those used for cancer-related pain.

Short acting drugs like morphine sulphate 30 mg orally, codeine 120 mg orally, hydrocodone 30 mg orally, oxycodone 20-30 mg orally, hydromorphone 7.5 mg orally, can be used or long acting drugs like sustained-release morphine 30 mg orally, sustained-release oxycodone 20-30 mg orally or transdermal fentanyl can be used.

Certain opioid medications should be avoided when possible in the elderly. One example is the use of meperidine, which has a metabolite that is a potent central nervous system (CNS) stimulant with an 8 to 35 hour half-life. Side effects with prolonged use include agitation, confusion, twitching, delirium, tremors and seizures. Propoxyphene is also not recommended for use in geriatric patients due to its high incidence of CNS side effects and a metabolite half-life of 30 to 36 hours. Pentazocine should be avoided in geriatric patients due to its high incidence of CNS stimulatory effects, which may result in dizziness, lightheadedness, dysphoria, and hallucinations.

Opioids for episodic (ie., chronic recurrent or noncontinuous) pain should be prescribed as needed, rather than around the clock.

Long-acting or sustained-release analgesic preparations should be used only for continuous pain.

The potential adverse effects of opioid analgesic medication should be anticipated and prevented or treated promptly.

A. Constipation should be prevented.

- A prophylactic bowel regimen should be initiated with commencement of analgesic therapy.
- Bulking agents should be avoided.
- Adequate fluid intake should be encouraged.
- Exercise, ambulation, and physical activities should be encouraged.
- Bowel function should be evaluated with every follow-up visit.
- Rectal examination and disimpaction should occur before use of motility agents.
- An osmotic stimulant or motility agent should be prescribed, if necessary, to provide regular bowel evacuation.
- Motility agents should not be used if signs or symptoms of obstruction are present.
- If fecal impaction is present, it should be relieved by enema or manual removal.

B. Mild sedation and impaired cognitive performance should be anticipated when opioid analgesic drugs are initiated. Until tolerance for these effects has developed

- patients should be instructed not to drive.
- patients and caregivers should be cautioned about the potential for falls and accidents.
- monitoring for profound sedation, unconsciousness, or respiratory depression (defined as a respiratory rate of < 8 per minute or oxygen saturation of < 90%) should occur during rapid, high-dose escalations. Naloxone should be used carefully to avoid abrupt reversal of pain and autonomic crisis.

C. Severe nausea may need to be treated with antiemetic medications, as needed.

- Mild nausea usually resolves spontaneously in a few days.

- If nausea persists, a trial of an alternative opioid may be appropriate.
- Anti-emetic drugs should be chosen from those with the lowest side-effect profiles in older persons.

D. Severe pruritus may be treated with antihistamine medications.

E. Myoclonus may be relieved by the use of an alternate opioid drug or clonazepam in severe cases.

Non-opioid drugs (adjunct therapy)

The so called adjuvant analgesic drugs are medications not classified formally as analgesics but found to be helpful (i.e., they reduce pain) in certain intractable pain syndromes.²² The largest body of literature concerns the use of tricyclic antidepressants.^{46,47} The newer antidepressants (including selective serotonin reuptake inhibitors (SSRIs)) often have fewer side effects but have not been demonstrated to be very effective as analgesics.⁴⁷ Anticonvulsants (eg. carbamazepine) have also been shown to be helpful in some conditions.²² Although antidepressants and anticonvulsants may be used simultaneously for some refractory neuropathic pains, this increases the potential for adverse drug reactions, particularly in the older patient.

Antidepressants (amitriptyline, desipramine, doxepine, imipramine, nortriptyline) 10 mg hs orally given for neuropathic pain or in sleep disturbances. Anticonvulsants like clonazepam 0.25-0.5 mg, orally, given in neuropathic pain, while carbamazepine 100 mg orally is given only for lancinating pain (eg. trigeminal neuralgia). Gabapentine 100 mg orally or anti-arrhythmic like mexiletine 150 mg orally can also be used in neuropathic pain. Baclofen 5 mg orally can be used for neuropathic pain as well as for muscle spasms, while corticosteroids (prednisone) 2.5-5.0 mg/day orally may be given in inflammatory diseases. For diagnostic test we can use local anaesthetics (intravenous) lidocaine 3-5 mg/kg infused every 15-30 minutes.

Specific recommendations

- All older patients with diminished quality of life as a result of chronic pain are candidates for pharmacologic therapy.
- The least invasive route of administration should be used (usually the oral route).

- Fast onset, short acting analgesic drugs should be used for episodic (ie., chronic recurrent or noncontinuous) pain.
- Acetaminophen is the drug of choice for mild to moderate musculoskeletal pain.
- Patients should be re-evaluated frequently for drug efficacy and side effects during initiation, titration, or any change in dose of analgesic medications.
- Patients should be re-evaluated on a regular basis for drug effectiveness and side effects throughout long-term analgesic drug maintenance.
- The clinician should watch for indications of the use of medications prescribed for other persons or of illicit drug use (the latter being very rare in this population).
- The clinician should watch for signs of narcotic use for inappropriate indications (eg., anxiety, depression).
- Requests for early refills should include evaluation of tolerance, progressive disease or inappropriate behavioral factors.
- These evaluations need to take place with the same medical equanimity accompanying similar evaluations for long term management of other potentially risky medications (ie. anti-hypertensive medications) in order not to burden the patient with excessive worry or unnecessary fears or to promote "opiophobia."
- Patients on long-term NSAIDs should be periodically monitored for gastrointestinal blood loss, renal insufficiency, and other drug-drug or drug-disease interactions.
- Carbamazepine is the medication of choice for trigeminal neuralgia.
- Clinical endpoints should be decreased pain, increased function, improvements in mood and sleep, not decreased drug dose.
- Economic issues do play a major role in current pain management and should enter into decision making processes at some level.

Table 3: The Short Form McGill Pain Questionnaire

	NONE	MILD	MODERATE	SEVERE
THROBBING	0	1	2	3
SHOOTING	0	1	2	3
STABBING	0	1	2	3
SHARP	0	1	2	3
CRAMPING	0	1	2	3
GNAWING	0	1	2	3
HOT-BURNING	0	1	2	3
ACHING	0	1	2	3
HEAVY	0	1	2	3
TENDER	0	1	2	3
SPLITTING	0	1	2	3
TIRING- EXHAUSTING	0	1	2	3
SICKENING	0	1	2	3
FEARFUL	0	1	2	3
PUNISHING- CRUEL	0	1	2	3

B. Non pharmacological treatment

All patients with diminished quality of life as a result of chronic pain are candidates for nonpharmacologic pain management strategies.

Nonpharmacologic interventions can be used alone or in combination with pharmacologic strategies for chronic pain management.

Nonpharmacologic pain management strategies encompass a broad range of treatments and physical modalities. Education programmes, cognitive-behavioral therapy, exercise programmes, acupuncture, transcutaneous nerve stimulation, chiropractic, heat-cold massage, relaxation and distraction techniques have each been helpful for some patients.^{19,48-55} Moreover; these strategies carry few adverse effects other than cost. Many patients use these approaches, not always with the advice of their primary healthcare provider.^{12,55} Although many of these interventions provide short term relief, few have been shown to have greater benefit than placebo controls in randomized trials for the long-term management of chronic pain in older people.

A variety of alternative therapies are also used by many patients.⁵⁵ Healthcare providers should be aware that patients with unrelieved chronic pain often seek alternative medicine approaches, including use of homeopathy, naturopathic preparations and spiritual

healing.¹²

Education programmes:

- Patient education should be provided for all patients with chronic pain.
- Content should include information about the known cause(s) of pain, methods of pain assessment and measurement, goals of treatment, treatment options, expectations of pain management, analgesic drug use for pain management (prescription and over-the-counter medications) and self help techniques such as the use of heat- cold, massage, relaxation and distraction.
- Educational content should be reinforced during every patient encounter.
- Specific patient education should be provided before special treatments or procedures.

Cognitive behavioral therapy:

- Cognitive strategies are aimed at altering belief structures, attitudes and thoughts in order to modify the experience of pain and suffering. These include various forms of distraction, relaxation, biofeedback, and hypnosis. Behavioral therapy discourages abnormal, unpredictable or self defeating

behavior and provides positive reinforcement for successes in achieving goals.

- Cognitive behavioral therapy usually requires 6 to 15 sessions (60 to 90 minutes per session) with a trained therapist and includes components of education, rationale for therapy, coping skills training, methods to generalize coping skills and relapse prevention.⁵²
- Cognitive behavioral therapy should be conducted by a professional.
- Plans for a flare-up should be a part of this therapy to prevent self defeating behavior during episodes of pain exacerbation.

Exercise programmes:

- Physical exercise has also been shown to improve pain management in older patients significantly.⁴⁸⁻⁵⁰
- Initial training should be conducted over 8 to 12 weeks and should be supervised by a trained professional with knowledge of the special needs of older adults.
- Exercise should be tailored to the needs and preferences of the patient in consultation with the primary clinician.
- Moderate levels of exercise conditioning (aerobic or resistance training) should be maintained indefinitely.

Other nonpharmacologic therapies:

Chiropractic, acupuncture or transcutaneous nerve stimulation may be helpful for some patients, but they are expensive and have not been shown to have greater benefit.

Self-administered heat, cold and massage and the use of liniments and other topical agents may be helpful for some patients. Initial instruction and demonstration should be provided by a trained clinician. Precautions against thermal injury should be provided, especially for patients with sensory disturbances (eg., diabetic patients) or with cognitive impairment.

Conclusion

Traditionally, health care professionals have not been adequately trained in pain assessment and management. This lack of sensitivity to the problem

of pain and its sequelae has contributed to both underrecognition and undertreatment of pain in older adults. Progress has been limited by a lack of professional attention to the interdisciplinary model critical to effective care of older adults.

The role of the consultant in pain management is to serve as a patient advocate, facility resource, and interdisciplinary team member to optimize geriatric pain management outcomes.

Today, financial considerations are a part of every healthcare decision. Insurance companies, managed care plans, and federal and state health agencies should recognize the importance of pain management. Adequate reimbursement should be provided for those services that ensure comfort, rehabilitation, and palliative care, especially for those near the end of life.

Health care facilities should support policies and procedures for routine screening, assessment, and treatment of chronic pain among all older patients. Health organizations should include pain management as a major domain in the development of clinical pathways.

Healthcare facilities (ambulatory care facilities, hospitals, nursing homes and home-care agencies) should periodically conduct quality assurance or quality improvement

Quality assurance or quality improvement activities in pain management.

QA or QI activities should include appropriate structure and process indicators of pain assessment and treatment activities.

Benchmarks for quality improvement should be established internally and should include quantifiable pain outcomes, including (but not limited to) patient satisfaction.

Effective pharmacologic and nonpharmacologic strategies for pain management should be provided.

Cost-containment strategies must not result in the inaccessibility of effective treatment or needless suffering.

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