MINISTRY OF HEALTH MALAYSIA

GUIDELINES FOR PAIN MANAGEMENT IN THE ELDERLY

1st Edition

Guidelines For Pain Management In The Elderly: 1st Edition

This document was developed by the Clinical Audit Unit, Medical Care Quality Section of Medical Development Division, Ministry of Health Malaysia and the Geriatric Subcommittee of the National Pain Free Programme Committee.

Published in September 2018

A catalogue record of this document is available from the National Library of Malaysia

ISBN: 978-967-2173-30-4

A copy of this document is also available at MOH Portal: *www.moh.gov.my*

ISBN 978-967-2173-30-4

ADVISOR

Dr. Yau Weng Keong
National Head of Geriatric Service, Malaysia

TEAM MEMBERS

1. Dr. Ungku Ahmad Ameen bin Ungku Mohd. Zam
   Geriatrician, Hospital Tengku Ampuan Rahimah, Klang
2. Dr. Rizah Mazzuin binti Razali
   Geriatrician, Hospital Kuala Lumpur
3. Dr. Alan Ch'ng Swee Hock
   Geriatrician, Hospital Seberang Jaya
4. Dr. Elizabeth Chong Gar Mit
   Geriatrician, Hospital Kuala Lumpur
5. Dr. Nor Hakima binti Makhtar
   Geriatrician, Hospital Melaka
6. Dr. Teh Hoon Lang
   Geriatrician, Hospital Sultanah Bahiyah, Alor Star

REVIEWER

Dr. Muralitharan Perumal
Pain Consultant, Hospital Tengku Ampuan Rahimah, Klang

EDITORIAL BOARD

1. Dr. Paa Mohamed Nazir bin Abdul Rahman
   Deputy Director, Medical Care Quality Section
2. Dr. Faizah binti Muhamad Zin
   Head of Clinical Audit Unit
3. Dr. Anith Shazwani binti Adnan
   Assistant Director, Clinical Audit Unit

CONTENTS PAGE

1.0 INTRODUCTION

Malaysia population is ageing with the advancement of our medical health services. Life expectancy of male is estimated at 72.7 years and 77.4 years for female. The Statistics Department of Malaysia estimated that Malaysia would be an aged nation by the year 2030 when 15% of the total population are aged 60 years old and above. (1)

As the number of individuals older than 60 years continue to rise, frailty and chronic diseases associated with pain will also increase. Therefore, doctors and the health care givers will face significant challenges in managing pain in older adults. The consequences of pain are impaired activities of daily living (ADLs), impaired ambulation with gait abnormalities and falls, as well as depression, anxiety, sleep impairment and isolation that will result in strain on the health care economy. Pain may also be part of complications associated with deconditioning, accidents, polypharmacy, and cognitive decline.

Based on the National Health and Morbidity Survey, 2006, prevalence of chronic pain among elderly Malaysians was 15.2% (95% CI: 14.5 -16.8). The prevalence of chronic pain increases with advancing age; the highest prevalence was seen among the old-old group (80 years and older) category. Across young-old (60-79 years old) and old-old groups, chronic pain was more prevalent among females, Indian ethnicity, widows/widowers, rural residency and those with no educational background. (2)

The commonest causes of pain in the elderly are:

- Musculoskeletal disorders (including osteoarthritis resulting in low back and neck pain, osteoporotic fractures and chronic joint pain)
- Peripheral vascular disease
- Post-herpetic neuralgia
- Painful diabetic neuropathy
- Post-stroke pain
- Cancer-related pain

Pain in the elderly patients are usually under reported and unrecognized, whereby the causes maybe:

- challenges to proper assessment of pain especially in patients with sensory deprivation and cognitive impairment
- underreporting by patients
- atypical manifestations of pain in the elderly
- under appreciation of the pharmacokinetics and pharmacodynamic changes of aging with addition of poor knowledge among practitioners

Regardless of any challenges present in assessing the inconsistent and differences of pain perception, the management of pain in the elderly should receive at least as much attention as their younger counterpart.

2.0 APPROACH TO PAIN MANAGEMENT IN ELDERLY

The elderly often suffers both acute and chronic painful illnesses. They have multiple diseases, taking numerous medications including analgesics. However, the empirical basis of pain management in the elderly is still limited in providing clear directions for pain assessment and management for the healthcare providers.

This group of patients when managed in the ward or outpatient, frequently have complex medical issues with some degree of disabilities. Hence, managing pain in the elderly patients require comprehensive assessments by taking into considerations all aspects of physiological changes, physical function, cognitive status, family and social support as well as their personal beliefs.

Thus, the approach to pain management requires:

1. familiarity of assessment and management by clinician
2. multidisciplinary assessment and management involving nurses and other allied health members
3. appropriate applications of both pharmacological and non-pharmacological techniques

3.0 FACTORS AFFECTING PAIN MANAGEMENT IN ELDERLY

The elderly has been shown to be more reluctant than young people to report painful stimuli. Therefore, health care providers should understand their health problems, as they have their own beliefs, attitude and personality changes. On the other hand, studies have also shown that healthcare providers are not managing pain adequately as they perceived that elderly people are expected to have pain and therefore is considered a normal ageing process. (2) Furthermore, they have the perception that chronic pain in the elderly is not as serious a problem as acute pain.

They may also have complex medical problems. Apart from impaired physical health, a large number of them may have cognitive impairment (e.g. dementia) that affect their ability to perceive and respond to stimuli appropriately. This becomes a challenge to the managing clinician in instituting optimal care as these patients are vulnerable to becoming acutely confused. Differentiating between a cognitively impaired, an elderly with hearing complication and visually impaired elderly is a major challenge to provide adequate pain management.

Physiological changes in the elderly may result in reduced pain perception as a result of decreased pain receptors as well as impaired conduction velocities in both myelinated and unmyelinated fibres at the central nervous system. Loss of neurons at dorsal horns has also been documented. (4)

Table 1 lists physiological changes associated with ageing and its consequences to organ function. Ageing is characterized by a progressive and heterogeneous decline in physiological reserve of all organ systems, occurring at different rates which vary in different individuals. Understanding the effect of age-related decline in the reserve and compromised homeostasis bears important implications for the interpretation of clinical findings and furthermore providing understanding of the atypical

presentations of illnesses in older patients. For example, an elderly who has contracted community acquired pneumonia (CAP) may not exhibit typical symptoms of cough and fever. Absence of fever occurs in about 30-50% of frail older adults, even among those with serious infections. Immunological changes may result decrease inflammatory response and absence of leucocytosis. Instead, the non-specific presentations, like confusion or anorexia, will often be the only indication that infection is present.

Similarly, due to the physiological changes, the elderly may respond differently to the same drugs that are given to a younger patient with this occurring because of the pharmacokinetic or pharmacodynamic changes. Furthermore, many elder persons have multiple co-morbidities requiring them to be on many types of medications. The polypharmacy subjects them to higher risk of organ dysfunctions or adverse drug events.

With this understanding, it is clear how important the choice and dosing of the drugs will determine the success of pain management for the elderly patients.

Table 1: The physiological changes in older adults that affect drug handling

Physiological	Changes with normal ageing	Clinical consequences of changes
Absorption and function of the gastrointestinal (GI) tract	Delayed gastric emptying and reduced peristalsis Gastric secretion reduced	Alteration of drug absorption Reduced blood flow to the GI tract Increased risk of GI-related side effects including opioid-related gut mobility disturbance
Distribution	Decreased body water Increased body fat that causes lipid soluble drugs to accumulate in reservoirs Lower concentration of plasma proteins and increased free fraction of drugs that are highly bound to proteins	Reduced distribution of water soluble drugs Lipid soluble drugs have longer effective half-life Increased potential for drug –drug interactions
Hepatic metabolism	Decreased hepatic blood flow Reduced liver mass and functioning liver cells	Reduced first pass metabolism Oxidative reactions (phase I) may be reduced, resulting in prolonged half-life Conjugation (phase II metabolism) usually preserved Difficult to predict precise effects in an individual
Renal excretion	Reduced renal blood flow Reduced glomerular filtration Reduced tubular secretion	Reduced excretion of drugs and metabolites eliminated by kidney leading to accumulation and prolonged effects
Pharmacodynamics changes	Decreased receptor density Increased receptor affinity	Increased sensitivity to the therapeutic and side effects

Source: reference 6

4.0 PAIN ASSESSMENT IN ELDERLY

The assessment of pain in the elderly patients should be a routine part of care provision by all healthcare professionals. However, clinical manifestations of pain are often complex and multifactorial. As mentioned, the perception of pain also differs as the elderly patients' health may be complicated by other conditions such as depression, psychosocial factors and cultural differences. Pain may also be underreported because some may incorrectly perceived pain as a normal process of aging.

In view to the complexity in the assessment of pain syndromes in the elderly patients, besides standard medical assessment (history, physical examination & investigations), a comprehensive geriatric pain assessment is recommended (Table 2) for precise aetiology of the pain. Therefore, the pain assessment in the elderly patients may require a multidisciplinary approach. The evaluation of the level of daily function is also important as it reflects the degree of independence, level of caregiving needs and the overall quality of life for the elderly individual as patients must function despite pain.

The lack of a thorough assessment of pain and appropriate management plans could lead to detrimental consequences for the elderly patients. As biologic markers are not available, self-reporting is viewed as the best evidence in assessing pain and its intensity.

Table 2: Key elements of a comprehensive geriatric pain assessment

Pain assessment

- Direct enquiry about the presence of pain including the use of alternative words to describe pain
- Observation for signs of pain (especially in those with cognitive/ communication impairment)

Measurement of pain using standardized pain assessment tools

See table below

Impact of pain on daily function

- for example, ability to perform instrumental and activities of daily living, social functioning, appetite and sleep

Comorbidities and drugs

- regular review on the impact of the comorbidities on pain and vice versa

Attitudes and beliefs about pain, treatment goals and expectations

- information gathered should be informed to the family members or caregivers in order to optimize treatment

Assistance and Resources

- a holistic approach in identifying help from family members, caregivers and faith communities for maximal support

Source: reference 9

A variety of tools are available in the assessment of pain. It is crucial to determine the patient's ability to use the selected scale. However, intensity, quality, time course, effect on functional status and the meaning of pain are unique to the individuals and are not appreciably measured by standard pain assessment tools. Therefore, pain scales are limited in their ability to fully assess pain and should not be relied upon without a complete pain history or physical examination. A Unidimensional psychometric evaluation of pain intensity scales (Table 3) or multidimensional assessment are recommended in the elderly (Table 4).

Table 3: Unidimensional assessment

Numeric Rating Scale (NRS)	Numeric rating scales involve asking the patient to rate their pain from 0 to 10, with 0 representing no pain and 10 representing the other extreme of pain intensity. NRS can be oriented either vertically or horizontally, a **vertical presentation** may be easier for persons with alterations in abstract thinking and is often preferred by the older person. *Refer Appendix 3 & 4*
Verbal Descriptor Scale (VDS)	The VDS consists of a series of phrases that represent different levels of pain intensity (e.g., "no pain," "mild pain," "moderate pain," "severe pain," "extreme pain," and "the most intense pain imaginable"). It has shown good reliability and validity when used with the elderly individuals. As it requires patients to interpret and express their pain in verbal terms, the VDS is best suited for more articulate patients. **Of all the pain intensity scales evaluated, the VDS are the preferred pain scale by many elderly individuals**.
Visual Analogue Scale (VAS)	The VAS consists of a 10-cm line, with the left-hand side labelled "no pain" and the right-hand side labelled "most intense pain imaginable". The patients are required to mark on the line the level of pain experienced. VAS is relatively easy to use but it does require abstract thought and sensory, motor, and perceptual abilities necessary to use a pencil (or other fine-point writing instrument) to mark the line. Therefore, the VAS may be **inappropriate for patients with lower levels of education or with impaired cognition.**
Pictorial Pain Scale (PPS)	The Wong-Baker Faces Pain Scale consist of a series of progressively distressed facial expressions. The patient chooses the face that represents the severity or intensity of their pain. Psychometric evaluations of the PPS suggest that **it is a reliable and valid alternative for assessing pain intensity in cognitively intact and mild to moderately impaired elders.**

Table 4: Multi-dimensional assessment

McGill's Pain Questionnaire (MPQ)	The McGill Pain Questionnaire (MPQ) is a well-known tool for the thorough evaluation of pain location, intensity, temporal qualities, and sensitivity to changes, as well as sensory and affective aspects of pain. The MPQ is easily understood by the elderly individual and it shows good concurrent validity with other pain intensity scales, but **it is not recommended for use by illiterate or cognitively impaired individuals.**
Pain Assessment in advanced dementia PAINAD	PAINAD is a simple, valid and sensitive tool for detecting pain in people with advanced dementia and non-communicative patients but has a high false positive rate, frequently detecting psychosocial distress rather than pain. It is useful to assess whether pain management strategies have been successful.

Notes: All relevant forms for scales mentioned above can be referred in the appendix

A pain log diary done regularly should be encouraged so that the modification of the treatment could be performed to maximize response with the balancing of side effects of the therapy.

In addition, the **assessment of anxiety and mood**, especially depression, should be an essential component of the comprehensive pain assessment with elderly patients because mood states may alter pain perception or enhance pain intensity.

5.0 MODES OF TREATMENT

Treatment is essentially a combination of pharmacological and non-pharmacological whenever possible. The approach to management of acute and chronic pain are as stated in the Ministry of Health's "Pain As The 5th Vital Sign" Guideline however strong emphasize is given in the pain assessment and the pharmacological aspect of management.

WHO analgesic pain ladder is used as a standard guide for pain management, however, choice of pharmacological management in elderly is highly individualised with variabilities in the choice of treatment options.

5.1 PHARMACOLOGICAL MANAGEMENT

Principles of analgesic prescriptions in the elderly

- Timing of medication administration is important. Severe, episodic pain requires treatment with medicines with a rapid onset of action and short duration. However, if a patient is experiencing continuous pain, regular analgesia is the most effective, possibly using modified release formulations.
- Only one drug should be initiated at a time using a low dose, and this should be followed by low incremental dose titration.
- Allow sufficiently long intervals between introducing drugs to allow the assessment of effect.
- Combination therapy using drugs with different mechanisms of action may have synergistic effects to provide greater pain relief with fewer side effects than higher doses of a single drug.
- Consider the use of non-pharmacological strategies such as physiotherapy, cognitive behavioural approaches and acupuncture, in combination with medication.
- Treatment should be monitored regularly and adjusted if required to improve efficacy and limit adverse events.
- When choosing an analgesic for an individual, co-morbidity, contraindications and possibilities of drug–disease and drug–drug interactions are weighted.

EXECUTIVE SUMMARY OF PAIN MANAGEMENT

A. Paracetamol is considered the first-line treatment for both acute and persistent pain in older adults due to its efficacy and good safety profile. There are few absolute contraindications and relative cautions to prescribing paracetamol and the maximum total daily dose should not exceed 4 grams.

B. Non-selective non-steroidal anti-inflammatory drugs, (NSAIDs) may be cautiously used if other safer treatments have not provided adequate pain relief. The lowest dose should be used and for the shortest duration. A proton pump inhibitor (PPI) should be co-prescribed together with the NSAID or cyclooxygenase-2 (COX-2) selective inhibitor. Older adults taking NSAIDs should be monitored for gastrointestinal, renal and cardiovascular adverse effects; drug–drug and drug–disease interactions.

C. Opioid therapy may be considered for patients with moderate or severe pain, e.g. if the pain is causing functional impairment or is reducing their quality of life. Adverse effects such as nausea and vomiting should be anticipated and suitable prophylaxis considered. Laxatives such as the combination of a stool softener and a stimulant laxative, should be prescribed throughout treatment with opioid.

D. Tricyclic antidepressants and anti-epileptic drugs have demonstrated efficacy in several types of neuropathic pain. However, their use in an older population is limited by adverse effects.

E. Intra-articular corticosteroid injections are effective in relieving knee osteoarthritic pain in the short term, with little risk of complications and/or joint damage. Intra-articular hyaluronic acid is effective, free of systemic adverse effects and should be considered in patients who are intolerant to systemic therapy. Intra-articular hyaluronic acid appears to have a slower onset of action than intra-articular steroids, but the effects tend to last longer.

F. The current evidence for the use of epidural steroid injections in the management of sciatica is conflicting and, until further larger studies become available, no firm recommendations can be made. There is, however, a limited body of evidence to support the use of epidural injections in spinal stenosis.

NON-OPIOID ANALGESICS:

A. Paracetamol

It is an effective analgesic for musculoskeletal pain, including osteoarthritis and low back pain, and is recommended as a first-choice analgesic in several consensus guidelines. (21,25,27) It does not provide significant anti-inflammatory or antiplatelet effects as it does not inhibit thromboxane.

Paracetamol taken at recommended doses is considered safe and is not associated with significant gastrointestinal, renal, cardiovascular or central nervous systems adverse effects. Although transient increases in alanine amino-transaminase have been reported, these do not translate into liver failure provided that the maximum daily doses are avoided.

A case series reports acute liver failure in malnourished patients (weight <50 kg) and recommends dose reduction (maximum 2 g/24 h) if paracetamol is used for these patients. (27) Patients should be educated to not to exceed the recommended maximum daily dose (4 g/24 h) of paracetamol, including that contained in combination products and over the counter preparations such as cold and influenza remedies.

We suggest paracetamol doses are titrated to its lowest dose for optimum analgesics effect, which are different for every elderly individual in order to prevent liver complications.

B. Non-steroidal anti-inflammatory drugs (NSAIDs) & selective COX-2 inhibitors

If there is inadequate pain relief with paracetamol or topical NSAIDs, oral NSAIDs/ selective COX-2 inhibitors can be considered as they are more effective for persistent inflammatory pain than paracetamol. Nonetheless, NSAIDs and selective COX-2 inhibitors must be used with great caution in older people due to its potentially serious adverse effects. The lowest dose should be used for the shortest period and therapy should be reviewed on a regular basis. NSAIDs have been implicated in up to a quarter (23.5%) of hospital admissions due to adverse drug reactions in older people. (21) As not all NSAIDs are equal, prescribing should be based on the safety profiles of individual NSAIDs or selective COX-2 inhibitors, and on individual patient risk profiles.

Gastrointestinal effects

The risk of gastrointestinal bleeding with NSAIDs use increases with age, dose and duration of therapy. Concomitant use of antiplatelet drug greatly increases the gastrointestinal risks of NSAIDs and severely reduces any GI safety advantages of selective COX-2 inhibitors. Aspirin should be co-prescribed only if absolutely necessary. Adverse gastrointestinal effects may be reduced by prescribing a proton-pump inhibitor.

Renal effects

NSAIDs can contribute to worsening of chronic renal failure, particularly in patients taking diuretics or angiotensin converting enzyme inhibitors. Renal vasoconstriction and increased tubular sodium

reabsorption lead to water and sodium retention, oedema and worsening of congestive cardiac failure.

Cardiovascular effects

NSAID cardiovascular effects include fluid retention, worsening hypertension, congestive cardiac failure, myocardial infarction and strokes. NSAIDs use may produce an increase in a mean arterial blood pressure of 5 mmHg. Selective COX-2 inhibitors are contraindicated in patients with established ischaemic heart disease and cerebrovascular disease, and should be used with caution in patients with cardiovascular risk factors.

OPIOIDS:

Opioids are generally safe and they provide effective pain relief as part of a comprehensive pain management strategy. Strong opioids are commonly used in the management of chronic, severe cancer and non-cancer pain in older people. RCTs have demonstrated short-term efficacy in persistent musculoskeletal pain, including osteoarthritis and low back pain, and various neuropathic pains, such as post-herpetic neuralgia and diabetic peripheral neuropathy. However, longer-term efficacy and safety data are scarce. (32,33)

A cohort study in the USA of nursing home residents found that the use of modified-release opioids improved functional status and social engagement compared with short-acting opioids. (34)

Although older adults usually require lower doses than younger individuals, opioid effects do not appear to vary with age and careful dose titration based on individual response is required. Adverse effects e.g. sedation, nausea and vomiting, tend to be worse around opioid initiation or dose escalation, and usually resolve after 2 or 3 days. On the other hand, constipation does not improve and should be managed with laxative therapy. Adverse effects of opioids such as drowsiness and dizziness are associated with an increased incidence of falls and fractures. Cognitive function is relatively unaffected in patients taking stable opioid doses, but it may be impaired for up to 7 days after a dose increase.

Fear of addiction can be a major barrier to long-term opioid therapy. It is reassuring, however, that in a review of three studies that included over 25,000 patients taking long-term opioids without a history of drug dependence, only seven cases of iatrogenic addiction were identified. (37)

Opioid use in older people may be associated with less risk than that of NSAIDs. As there is marked inter-patient variability in efficacy and tolerability, switching or rotation may be considered if there is no analgesic response or significant adverse events with one particular opioid. Patients with continuous pain should be treated with modified release oral or transdermal opioid formulations aimed at providing relatively constant plasma concentrations.

In older people, opioids should be started at 25-50% of the recommended dose for adults. The "start low and go slow" approach is essential when dosing opioids. Patients who report severe pain will require ongoing titration and frequent re-evaluation to balance pain relief with adverse effects.

A. Weak opioids

In the World Health Organization's (WHO) pain ladder, weak opioids such as codeine and dihydrocodeine are recommended for use in moderate pain. Nonetheless, their use is limited by adverse effects, particularly constipation. As an alternative, a low dose of a more potent opioid such as morphine may be better tolerated.

Tramadol

Tramadol is a centrally acting analgesic with two mechanisms of action: weak mu-opioid agonist activity; and serotonin and noradrenaline reuptake inhibition. It should be used with caution in patients taking other serotonergic drugs. It may have less effect on respiratory and gastrointestinal function than other opioids, but may cause confusion in older people. Tramadol is contraindicated in patients with a history of seizures as it may reduce the seizure threshold particularly at doses higher than 300 mg/day. A prospective, age-controlled study suggests older people require 20% less tramadol than younger adults, although the pharmacokinetics remained unaffected by age. (35) Tramadol should be initiated at 25mg once or twice daily and increased in 25mg increments every 2-3 days to a goal of 100mg a day.

B. Strong opioids

Morphine

Morphine has been used to treat cancer and non-cancer pain for many years and has been the subject of a large number of trials. Similar efficacy to newer opioids, such as oxycodone, fentanyl and methadone has been demonstrated.

Morphine undergoes substantial hepatic metabolism. Morphine-6-glucuronide (M6G) contributes to the overall analgesic effect and morphine-3-glucuronide (M3G) may cause neuroexcitatory effects. Enterohepatic recirculation of M3G and M6G results in these metabolites being excreted in bile and then faeces and urine for several days after the last dose is administered. Renal impairment produces accumulation of the metabolites that may cause side effects requiring dose adjustment or switching to an alternative opioid.

A combination of morphine and gabapentin produces better analgesia than the individual drugs or placebo in the management of post-herpetic neuralgia (PHN) and peripheral diabetic neuropathy, but side effects are common. Morphine at a dose of 2-3 mg every 6 hours with a plan to follow up within 48-72 hours to assess for efficacy and adverse effects is a reasonable starting regimen for patients with moderate to severe pain.

Oxycodone

Several RCTs have found that oxycodone is similarly efficacious compared to morphine and is well tolerated in the management of cancer pain. Studies have also demonstrated the efficacy of oxycodone in low back pain, osteoarthritis, post herpetic neuralgia and peripheral diabetic neuropathy. (40)

There were no studies that have been undertaken specifically in older people. In patients aged over 65 years, oral oxycodone may be associated with seven times more constipation than transdermal fentanyl.

Fentanyl

One randomised, double-blind, placebo-controlled trial studied transdermal fentanyl in cancer pain, in which it was found to provide effective analgesia and well tolerated, with low incidences of constipation, nausea and drowsiness. (41) Similar results have been found in several other open label studies. Transdermal fentanyl has also been used for persistent musculoskeletal and neuropathic pains.

The use of transdermal fentanyl, as measured by the need for dose adjustments and use of oral morphine for breakthrough pain, is similar in older people with cancer compared with an adult population. Patient global assessment of transdermal fentanyl therapy was greater in older people (aged over 65) than younger adults. (42)

Transdermal fentanyl may be associated with less constipation than oral oxycodone in older people. The convenience of changing the transdermal patch every 72 h reduces administration time and staffing requirements in residential and nursing homes. However, owing to its high potency, transdermal fentanyl must not be used for opioid initiation and should only be used in the context of opioid rotation or switching.

Buprenorphine

Buprenorphine is available in several formulations for sublingual, parenteral and transdermal administration. In several RCTs, patients with either cancer or non-cancer pain were randomised to receive buprenorphine or placebo patches. Pain relief, pain intensity and duration of pain-free sleep all improved from baseline. (39)

A post-marketing surveillance of transdermal buprenorphine in over 13,000 patients (mean and median age 68 years) demonstrated efficacy and sustained and dose-dependent analgesia.

The pharmacokinetics of buprenorphine are not altered in patients with renal failure. In a small number of patients, transdermal buprenorphine has similar analgesic efficacy for moderate to severe pain in older people (aged over 65 years) compared with two groups of younger people (patients aged ≤50 years and patients aged been 51 and 64 years). (44)

The reduction in pain intensity was similar in all age groups and there was an increase in the duration of sleep. Incidence and severity of side effects was similar in all groups; dizziness and nausea being most commonly reported. The convenience of a transdermal preparation that requires changing every 7 days reduces administration time and staffing requirements in residential and nursing homes.

Table 5: Commonly prescribed opioids in older adults

Opioid	Potency	WHO step	Metabolism/ Excretion	Common Adverse Effects	Other considerations
Tramadol	Weak	2	Hepatic/ renal	Constipation, nausea, appetite loss, drowsiness, dizziness, sweating	Lowers seizure threshold; may precipitate serotonin syndrome; may increase suicide risk
Codeine	Weak	2	Hepatic (CYP2D6)/ renal	Constipation, nausea, appetite loss, drowsiness, dizziness, sweating, falls	Variability in metabolism both slow and rapid can cause variability in response
Hydro-codone	Weak	2	Hepatic (CYP2D6)/ renal	Anxiety, constipation, dry mouth, headache, nausea	Formulated with paracetamol, which can increase liver toxicity
Morphine	Strong	3	Hepatic/ renal	Constipation, nausea, vomiting, appetite loss	Metabolites accumulate in renal insufficiency
Oxycodone	Strong	3	Hepatic (CYP 3A4)/ renal	Constipation, dizziness, drowsiness, heartburn, nausea, vomiting	No parenteral preparation available
Fentanyl	Strong	3	Hepatic/ renal	Anxiety, confusion, constipation, headache, indigestion, nausea	Prolonged elimination may occur; structurally different than morphine, thus can be used in morphine allergy
Bupre-norphine	Strong	3	Hepatic/ faecal	Less constipation, nausea, and respiratory depression than other opioids	Can be used safely in the context of renal failure

ADJUVANT DRUGS:

A. Antidepressants

- Tricyclic antidepressants

The tricyclic antidepressants, such as amitriptyline and imipramine, were the first adjuvant drugs to be used in the management of PHN and painful peripheral diabetic neuropathy. However due to their adverse effects e.g. urinary retention, postural hypotension and sedation (both increasing the risk of falls), glaucoma and cardiac arrhythmias, these drugs should be prescribed with caution or are contraindicated in older people. One in five people discontinue treatment because of adverse effects. Nortriptyline may produce less anticholinergic adverse effects.

- Serotonin reuptake inhibitors

Even though the tolerability of serotonin reuptake inhibitors (SSRIs) is better than tricyclic antidepressants, the evidence for pain relief is controversial.

- Serotonin noradrenaline reuptake inhibitors

Serotonin noradrenaline reuptake inhibitors (SNRIs) such as duloxetine, have demonstrated efficacy in some neuropathic pain conditions and may have better tolerability than tricyclic antidepressants. RCTs have established the analgesic efficacy of duloxetine in four chronic pain conditions, i.e. diabetic peripheral neuropathy, fibromyalgia, chronic low back pain and osteoarthritis knee pain.

Duloxetine is usually started at 30mg/day and may be increased to 60mg/day after 2 weeks if required. The most commonly reported adverse effects include dry mouth, nausea, constipation, diarrhoea, fatigue, dizziness, somnolence and insomnia. Duloxetine use should be avoided in patients with hepatic impairment or heavy alcohol use as hepatitis and hepatic failure have been reported.

B. Anti-epileptics

Anti-epileptic drugs, such as gabapentin and pregabalin, have become widely used in neuropathic pain states, as several studies have demonstrated analgesic efficacy and fewer adverse effects than older anti-epileptic drugs. Efficacy has been demonstrated in PHN, diabetic peripheral neuropathy and central pain syndromes. Although the potential for drug–drug interactions is lower, elimination of gabapentin and pregabalin is dependent on renal function and dose adjustment is required in renal impairment.

Dose titration is required during the initiation of gabapentin or pregabalin, although for PHN, initiation of therapy with gabapentin 200 mg administered three times daily had similar efficacy and side effects to lower doses studied. When indicated, treatment should start with the lowest possible dose and be increased very slowly based on response and side effects.

TOPICAL THERAPIES:

Topical administration may have improved tolerability than other routes of administration and may be preferable for older people.

A. Lignocaine

Several studies have demonstrated the efficacy of topical lignocaine, especially the lignocaine 5% medicated plaster, predominantly in PHN. Its advantages include ease of use, the absence of toxicity and the lack of drug interactions. One study which compared the lignocaine 5% medicated plaster and pregabalin in PHN and diabetic polyneuropathy found that more patients with PHN responded to lignocaine 5% medicated plaster. Responses were comparable for both treatments for patients with diabetic polyneuropathy. Fewer patients in the lignocaine 5% medicated plaster group experienced drug-related adverse events and discontinuations. Therefore, lignocaine 5% medicated plasters should be considered in the treatment of localised neuropathic pain for people who are unable to take oral medication.

B. NSAIDs

Topical NSAIDS are effective in reducing pain and may decrease the incidence of systemic adverse effects. Several studies have demonstrated the efficacy of topical NSAIDs in non-neuropathic persistent pain.

C. Capsaicin

Topical capsaicin cream may be used in the management of osteoarthritis and neuropathic pain, although a substantial proportion of patients are unable to tolerate the intense burning after application. A 1-hour application may provide pain relief for over 13 weeks for Post herpetic neuralgia.

Some analgesics have been formulated as topical treatments and may be beneficial for localised pain. Topical lignocaine and capsaicin have limited efficacy in the management of localised neuropathic pain, and topical NSAIDS may be suitable for older people with non-neuropathic pain.

5.2 MINIMALLY INVASIVE PROCEDURES

The most commonly employed modality for pain control in older people is pharmacotherapy. However, Ozyalcin suggests in his review that when weak opioids were ineffective, therapeutic nerve blocks or low-risk neuroablative pain procedures should be employed prior to strong opioids (49). Furthermore, he considered a combination of invasive procedures and systemic medications has a distinct advantage of reducing medication intake and its side effects. Freedman concurred that effective pain management in the older patient could be achieved through a multimodality approach, including invasive techniques (50) .Therapeutic interventional therapies in the management of chronic pain include a variety of neural blocks and minimally invasive procedures.

Intra-articular (IA) peripheral joint injections

Osteoarthritis (OA) is commonly the result of 'wear and tear' that accompanies ageing. Any joint may be affected. The knee is the site most affected and is a common cause of pain in older people. Knee pain is associated with considerable reduction in functional ability, which in turn strongly predicts future disability and dependency.

a. Corticosteroids

IA steroid injection is efficacious for short-term pain relief in OA of the knee based on several RCTs. One systematic review concluded that there is a significant reduction in pain within the first week following the injection, and lasting for a period of 3 to 4 weeks. Adverse effects were minimal. A larger meta-analysis that included 10 trials, confirmed the short-term benefits and suggested that there may also be a significant long-term response noted at 16–24 weeks, although higher doses of corticosteroids (equivalent to 50 mg prednisolone) may be needed to obtain a long-term response.

A comprehensive Cochrane review and meta-analysis looked at 26 RCTs comparing IA corticosteroids against placebo, IA hyaluronic acid (HA) preparations and joint lavage. The majority of patients in these trials were older patients with the mean age of 50–71 years. Of these, 13 trials compared IA corticosteroids with placebo, of which eight studies reported on pain relief. The analysis concluded that steroids were more effective than placebo in reducing pain in week one (NNT = 3–4). The effect continued for 3 weeks but thereafter the evidence for its effect on pain was poor. Interestingly, comparisons between IA corticosteroid and joint lavage showed no differences in efficacy.

The type of corticosteroid preparation used varied among the trials included in the meta-analyses. In a comparative study between triamcinolone hexacetonide (THA) and methylprednisolone acetate (MPA), it was noted that both gave significant pain relief at Week 3 ($P < 0.01$), but only MPA showed an effect at Week 8 compared with baseline ($P < 0.05$). THA was more effective than MPA in reducing pain at Week 3 ($P < 0.01$), but this difference was lost at Week 8. The mean age of the patients in this study was 62.5 years

IA corticosteroid injections in OA of the knee are effective in relieving pain in the short term, with little risk of complications and/ or joint damage.

b. Viscosupplementation (intra-articular hyaluronic acid injection)

The use of IA HA preparations for pain relief has gained wide acceptance in patients with knee pain from OA. The practice is supported by several systematic reviews and guidelines and is refuted by only one review.

Many HA formulations exist, with varying molecular weight, pharmacodynamics, treatment schedule and time–effect response. The Cochrane review provides a comprehensive by-product and by-class analysis. Compared with lower molecular weight HA, the highest molecular weight HA may be more efficacious.

Compared with placebo, viscosupplementation is efficacious in providing pain relief with beneficial effects on pain, function and patient global assessment. The Cochrane review concluded that the effect of IA HA is not only statistically significant, but also clinically important. The benefits are achieved with very low incidence of systemic adverse effects. Minor local reactions have been reported e.g. pain and swelling at the site of injection. However, HA acid may be slow to produce an effect and may not be seen in the first 3 to 4 weeks, but is significant by Week 5–11 and Week 8–12.

Viscosupplements are comparable in efficacy to systemic forms of active intervention. In an effectiveness trial, HA lessened pain and reduced costs for other therapy and devices at 1 year. IA HA is effective and relatively free of systemic adverse effects. It should be considered in patients intolerant to systemic therapy.

In comparison trials between corticosteroids and HA products, the Cochrane review concluded that no statistically significant differences were in general detected at 1–4 weeks post-injection. Between 5 and 13 weeks post-injection, HA products were more effective than corticosteroids. In general, the onset of effect was similar, but the effects of HA products seem to last longer.

Intrathecal methylprednisolone

Acute herpes zoster and PHN are common in older people. At the median age of 70 years, between two-thirds to 50% of patients develop PHN following an attack of herpes zoster, defined as pain persisting for >3 months or for >1 month, respectively.

Case series and controlled trials have demonstrated the benefits of nerve block for pain in both acute herpes zoster and PHN.

The use of intrathecal methylprednisolone as a treatment for long-standing intractable PHN was investigated in a randomised controlled study that enrolled 277 patients randomly assigned to receive either intrathecal methylprednisolone and lignocaine, lignocaine alone or no treatment, once weekly for up to 4 weeks. Patients were followed up for 2 years. In the methylprednisolone–lidocaine group, the intensity and area of pain decreased and the use of the NSAID declined by >70% 4 weeks after the end of treatment. Approximately 90% of patients in the methyl-prednisolone–lidocaine group had good or excellent global pain relief at all the follow-up evaluations, which was significantly better than in the control group ($P < 0.001$). Evaluation of treatment effect showed that one out of two patients will benefit from intrathecal steroid and local anaesthetic combination (NNT = 2). In contrast, there was minimal change in the degree of pain in the lignocaine only and control groups during and after the treatment period. No complications related to intrathecal methylprednisolone were observed. The results of this trial indicate that the intrathecal methylprednisolone—local anaesthetic is an effective treatment for PHN.

The effectiveness of epidural injection in the acute phase has been evaluated in two large RCTs. The first study enrolled 600 patients over 55 years of age with a herpetic rash of <7 days duration, and severe pain. Patients were randomised to receive either intravenous acyclovir for 9 days and prednisolone for 21 days (group A), or bupivacaine 6–12 hourly and methylprednisolone every 3 to 4 days through an epidural catheter for a period ranging from 7 to 21 days (group B). Efficacy was

evaluated at 1, 3, 6 and 12 months. The results showed epidural administration of local anaesthetic and methylprednisolone to be significantly more effective in preventing PHN throughout the 12 months of the study ($P < 0.0001$). The incidence of pain after 1 year was 22.2% (51 patients of 230) in group A and 1.6% (four patients of 255) in group B. The second study employed a more simplified approach, comprising single epidural injection of steroid and local anaesthetic. There were 598 patients with acute herpes zoster randomly assigned to receive either standard therapy (oral antivirals and analgesics) or standard therapy with one additional epidural injection of methylprednisolone and bupivacaine. At 1 month, 137 (48%) patients in the epidural group reported pain, compared with 164 (58%) in the control group ($P = 0.02$). The NNT was 10. However, there was no difference in pain control between the two groups at 3 and 6 months. The mean age of patients was 66 (58–75) years. The two trials confirm the effectiveness of epidural injection of steroids and local anaesthetics in reducing pain in the acute phase.

An earlier systematic review to evaluate the evidence has shown that nerve blocks using lignocaine alone, or lignocaine and corticosteroids, in controlling pain during the acute phase or for PHN is effective in 80% of cases. Reduction of pain in PHN has been reported in 60% of trials included in the review when the block is administered within 2 months of acute zoster infection. The evidence is in favour of combined local anaesthetic and corticosteroid injection, rather than either given alone.

Evidence for the use of pulsed radiofrequency is sparse. An early trial suggests that it may be useful in refractory cases, but further studies are needed. The effectiveness of botulinum toxin type A in PHN in doses not exceeding 300 IU has been demonstrated in two pilot studies, the first involving seven patients and the second which recruited 11 patients (level 4 evidence). More recently, a double-blind, randomised placebo-controlled trial was reported involving 29 patients with chronic neuropathic pain (PHN, post-traumatic and post-operative) using a once-only intradermal injection of botulinum toxin A, at multiple sites corresponding to the area of pain and followed up for 24 weeks. Significant sustained improvement in pain was noted (NNT for 50% pain relief tree at 12 weeks) (level 1 evidence). No systemic adverse effects were noted. However, it should be noted that of the 29 patients in the study, only four patients had underlying PHN. The initial pilot studies did not report the age of the patients, but the study by Ranoux et al. recruited patients between the ages of 27 and 78 years, five of who were >70 years old.

In older people, nerve blocks using a combination of local anaesthetic and corticosteroid are effective in acute herpes zoster and PHN. There is also some evidence for the use of botulinum toxin in these patients.

5.3 NON-PHARMACOLOGICAL PAIN MANAGEMENT MODALITIES

Multimodal approach has been shown to be effective in managing persistent pain in older patients. Physical and occupational rehabilitation as well as cognitive-behavioural therapy and movement-based interventions are helpful but unfortunately, research indicates that these treatments are largely underutilized.

An integrated multidisciplinary approach will enhance a strong therapeutic alliance between older patients and healthcare providers. A multidisciplinary meeting where a collaborative care strategy is formulated by taking into account the patients' comorbidities, cognitive and functional status, and

treatment goals and expectations including both social and family support networks will result in an effective treatment plan for older patients with persistent pain.

Recommendations of the non-pharmacological strategies include:

Non-pharmacological Modality	Comment
Cognitive Behavioural Therapy	Therapy must be delivered by a professional
Acupuncture	as adjunctive therapy
Mindfulness Mentation	limited evidence
Massage	as adjunctive therapy
Exercise	strong recommendation, to include strengthening, flexibility, endurance and balance training
Tai Chi	consider to apply if delivered appropriately
Yoga	consider to apply if delivered appropriately

6.0 SUMMARY

1. The elderly is a subgroup of patients who require careful assessment for optimum pain management, considering various factors that are recognisable or unrecognisable to physicians may present in them.
2. Physician will need to have necessary knowledge and skills to prevent complication in this vulnerable group of patients.
3. Family is encouraged to participate equally if not more in the care of elderly patients.

7.0 APPENDIX

7.1 OPIOIDS CONVERSION DOSES

DRUG	DOSE	EQUIVALENT ORAL MORPHINE DOSE
Dihydrocodeine	10mg	1mg
Tramadol	50mg	5mg to 10mg
Oxycodone / Oxycontin*	10mg	20 mg
Pethidine (oral)	50mg	5mg to 6.25mg
Pethidine (injected)	12.5mg	3mg

*Oxycontin-longer acting

BUPRENORPHRINE PATCH (Should only be used if patient intolerant of Tramadol)	APPROXIMATE ORAL MORPHINE EQUIVALENCE
Buprenorphrine patch 5 micrograms/hr	10mg/24hours
Buprenorphrine patch 10 micrograms/hr	20mg/24hours
Buprenorphrine patch 20 micrograms/hr	40mg/24hours

FENTANYL PATCH	DOSE	EQUIVALENT ORAL MORPHINE DOSE
Fentanyl 25 patch	25micrograms/hour 30mg to 134mg/24hours	30mg to 134mg/24hours
Fentanyl 50 patch	50 micrograms/hour 135mg to 224mg/24hours	135mg to 224mg/24hours
Fentanyl 75 patch	75 micrograms/hour 225mg to 314mg/24hours	225mg to 314mg/24hours
Fentanyl 100 patch	100 micrograms/hour 315mg to 404mg/24hours	315mg to 404mg/24hours

Patches MUST NOT be used in opioid-naive patients; they are indicated only for patients who are opioid tolerant

Note:

These conversions are provided only as an approximate guide to equivalences

When starting opioid therapy for chronic pain, clinicians should prescribe immediate-release opioids instead of extended-release/long-acting (ER/LA) opioids

Opioids do not have a ceiling effect or uniform plasma levels, so individual titration required

Monitoring of side effects especially with dose adjustment is important in elderly patients and those with cognitive impairment

Chou R, Fanciullo GJ, Fine PG, et al. Clinical guidelines for the use of chronic opioid therapy in chronic noncancer pain. J Pain. 2009 Feb. 10(2):113-30 . Aneurin Bevan University Health Board

7.2 COMMON DRUGS FOR MANAGEMENT OF PAIN IN ELDERLY

Drug	Recommended Starting Dose	Comments
Paracetamol	325–500 mg every 4 h or 500–1,000 mg every 6 h	Maximum dose usually 4 g daily. Reduce maximum dose 50% to 75% in patients with hepatic insufficiency or history of alcohol abuse.
Celecoxib Etericoxib	100 mg daily 90 mg daily	Higher doses are associated with higher incidence of gastrointestinal and cardiovascular side effects. Consider prescribing proton-pump inhibitor to reduce adverse GI effects or older patients with indications for cardio-protection with aspirin.
Morphine	2-3mg - every 6 h	Most commonly used for episodic or breakthrough pain
Oxycodone	2.5–5 mg every 4–6 h	Useful for acute recurrent, episodic, or breakthrough pain
Dihydrocodeine	2.5–5 mg every 4–6 h	Useful for acute recurrent, episodic, or breakthrough pain.
Tramadol	25 mg every 12 h Increase every 2-3 days Goal: 100mg daily	Monitor for side effects, including confusion, drowsiness, constipation and nausea. Risk of seizures if used in high doses or in predisposed patients. May precipitate serotonin syndrome if used with selective serotonin reuptake inhibitors.
Transdermal fentanyl (Duragesic) patch	12–25 mcg/h every 72 h	Started after initial dose is determined by effects of immediate-release opioid or as an alternative to a different long-acting opioid. Peak effects of first dose takes 18 to 24 hours. Duration of effect is usually 3 days but may range from 48 hours to 96 hours. May take two to three patch changes before steady-state blood levels reached.

7.3 ACTIVITY OF DAILY LIVING

7.3.1 Personal ADL

Barthel Index of Activities of Daily Living

Instructions: Choose the scoring point for the statement that most closely corresponds to the patient's current level of ability for each of the following 10 items. Record actual, not potential, functioning. Information can be obtained from the patient's self-report, from a separate party who is familiar with the patient's abilities (such as a relative), or from observation. Refer to the Guidelines section on the following page for detailed information on scoring and interpretation.

The Barthel Index

Bowels
0 = incontinent (or needs to be given enemata)
1 = occasional accident (once/week)
2 = continent
Patient's Score: _____

Bladder
0 = incontinent, or catheterized and unable to manage
1 = occasional accident (max. once per 24 hours)
2 = continent (for over 7 days)
Patient's Score: _____

Grooming
0 = needs help with personal care
1 = independent face/hair/teeth/shaving (implements provided)
Patient's Score: _____

Toilet use
0 = dependent
1 = needs some help, but can do something alone
2 = independent (on and off, dressing, wiping)
Patient's Score: _____

Feeding
0 = unable
1 = needs help cutting, spreading butter, etc.
2 = independent (food provided within reach)
Patient's Score: _____

Transfer
0 = unable – no sitting balance
1 = major help (one or two people, physical), can sit
2 = minor help (verbal or physical)
3 = independent
Patient's Score: _____

Mobility
0 = immobile
1 = wheelchair independent, including corners, etc.
2 = walks with help of one person (verbal or physical)
3 = independent (but may use any aid, e.g., stick)
Patient's Score: _____

Dressing
0 = dependent
1 = needs help, but can do about half unaided
2 = independent (including buttons, zips, laces, etc.)
Patient's Score: _____

Stairs
0 = unable
1 = needs help (verbal, physical, carrying aid)
2 = independent up and down
Patient's Score: _____

Bathing
0 = dependent
1 = independent (or in shower)
Patient's Score: _____

Total Score: _____

(Collin et al., 1988)

Scoring:

Sum the patient's scores for each item. Total possible scores range from 0 – 20, with lower scores indicating increased disability. If used to measure improvement after rehabilitation, changes of more than two points in the total score reflect a probable genuine change, and change on one item from fully dependent to independent is also likely to be reliable.

Sources:

- Collin C, Wade DT, Davies S, Horne V. The Barthel ADL Index: a reliability study. *Int Disabil Stud*. 1988;10(2):61-63.
- Mahoney FI, Barthel DW. Functional evaluation: the Barthel Index. *Md State Med J*. 1965;14:61-65.
- Wade DT, Collin C. The Barthel ADL Index: a standard measure of physical disability? *Int Disabil Stud*. 1988;10(2):64-67.

Guidelines for the Barthel Index of Activities of Daily Living

General

- The Index should be used as a record of what a patient ***does***, NOT as a record of what a patient ***could do***.
- The main aim is to establish degree of independence from any help, physical or verbal, however minor and for whatever reason.
- The need for supervision renders the patient not independent.
- A patient's performance should be established using the best available evidence. Asking the patient, friends/relatives, and nurses will be the usual source, but direct observation and common sense are also important. However, direct testing is not needed.
- Usually the performance over the preceding 24 – 48 hours is important, but occasionally longer periods will be relevant.
- Unconscious patients should score '0' throughout, even if not yet incontinent.
- Middle categories imply that the patient supplies over 50% of the effort.
- Use of aids to be independent is allowed.

Bowels (preceding week)

- If needs enema from nurse, then 'incontinent.'
- 'Occasional' = once a week.

Bladder (preceding week)

- 'Occasional' = less than once a day.
- A catheterized patient who can completely manage the catheter alone is registered as 'continent.'

Grooming (preceding 24 – 48 hours)

- Refers to personal hygiene: doing teeth, fitting false teeth, doing hair, shaving, washing face. Implements can be provided by helper.

Toilet use

- Should be able to reach toilet/commode, undress sufficiently, clean self, dress, and leave.
- 'With help' = can wipe self and do some other of above.

Feeding

- Able to eat any normal food (not only soft food). Food cooked and served by others, but not cut up.
- 'Help' = food cut up, patient feeds self.

Transfer

- From bed to chair and back.
- 'Dependent' = NO sitting balance (unable to sit); two people to lift.
- 'Major help' = one strong/skilled, or two normal people. Can sit up.
- 'Minor help' = one person easily, OR needs any supervision for safety.

Mobility

- Refers to mobility about house or ward, indoors. May use aid. If in wheelchair, must negotiate corners/doors unaided.
- 'Help' = by one untrained person, including supervision/moral support.

Dressing

- Should be able to select and put on all clothes, which may be adapted.
- 'Half' = help with buttons, zips, etc. (*check!*), but can put on some garments alone.

Stairs

- Must carry any walking aid used to be independent.

Bathing

- Usually the most difficult activity.
- Must get in and out unsupervised, and wash self.
- Independent in shower = 'independent' if unsupervised/unaided.

(Collin et al., 1988)

7.3.2 Instrumental ADL (iADL)

The Lawton Instrumental Activities of Daily Living Scale

A. Ability to Use Telephone

1. Operates telephone on own initiative; looks up and dials numbers 1
2. Dials a few well-known numbers 1
3. Answers telephone, but does not dial 1
4. Does not use telephone at all 0

B. Shopping

1. Takes care of all shopping needs independently 1
2. Shops independently for small purchases 0
3. Needs to be accompanied on any shopping trip 0
4. Completely unable to shop 0

C. Food Preparation

1. Plans, prepares, and serves adequate meals independently 1
2. Prepares adequate meals if supplied with ingredients 0
3. Heats and serves prepared meals or prepares meals but does not maintain adequate diet 0
4. Needs to have meals prepared and served 0

D. Housekeeping

1. Maintains house alone with occasion assistance (heavy work) 1
2. Performs light daily tasks such as dishwashing, bed making 1
3. Performs light daily tasks, but cannot maintain acceptable level of cleanliness 1
4. Needs help with all home maintenance tasks 1
5. Does not participate in any housekeeping tasks 0

E. Laundry

1. Does personal laundry completely 1
2. Launders small items, rinses socks, stockings, etc. 1
3. All laundry must be done by others 0

F. Mode of Transportation

1. Travels independently on public transportation or drives own car 1
2. Arranges own travel via taxi, but does not otherwise use public transportation 1
3. Travels on public transportation when assisted or accompanied by another 1
4. Travel limited to taxi or automobile with assistance of another 0
5. Does not travel at all 0

G. Responsibility for Own Medications

1. Is responsible for taking medication in correct dosages at correct time 1
2. Takes responsibility if medication is prepared in advance in separate dosages 0
3. Is not capable of dispensing own medication 0

H. Ability to Handle Finances

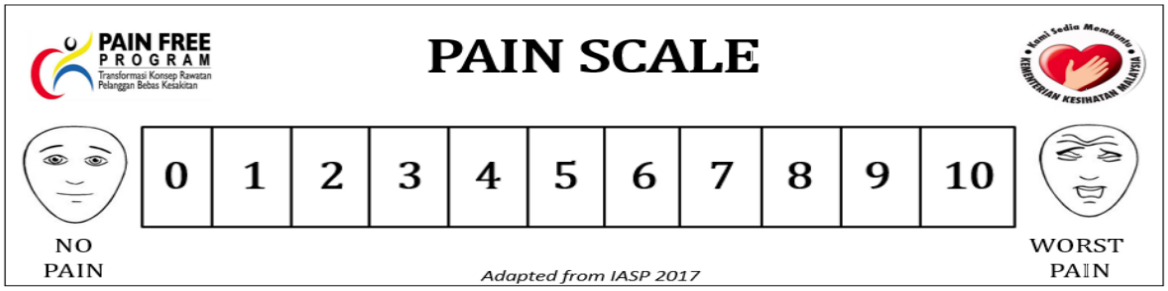
1. Manages financial matters independently (budgets, writes checks, pays rent and bills, goes to bank); collects and keeps track of income 1
2. Manages day-to-day purchases, but needs help with banking, major purchases, etc 1
3. Incapable of handling money 0

Scoring: For each category, circle the item description that most closely resembles the client's highest functional level (either 0 or 1).

Lawton, M.P., & Brody, E.M. (1969). Assessment of older people: Self-maintaining and instrumental activities of daily living. *The Gerontologist*, *9*(3), 179-186.

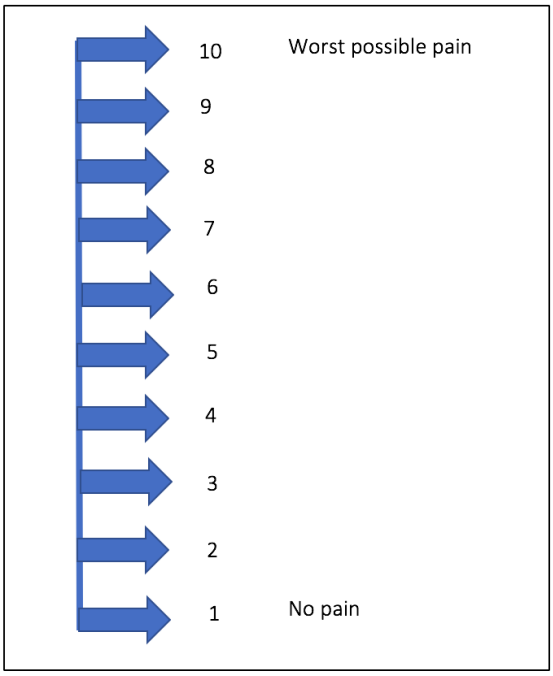
7.4 UNIDIMENSIONAL PAIN ASSESSMENT TOOLS

7.4.1 MOH Pain Scale



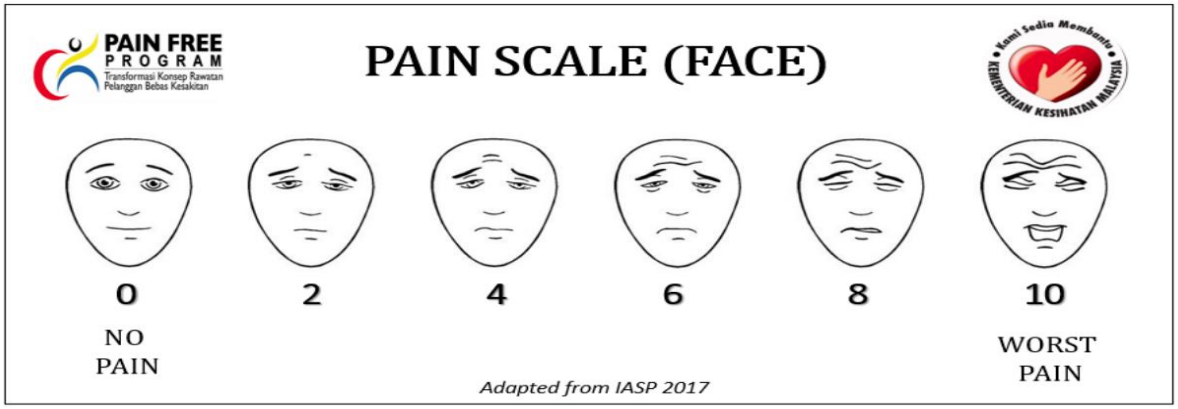
7.4.2 MOH Pain Scale

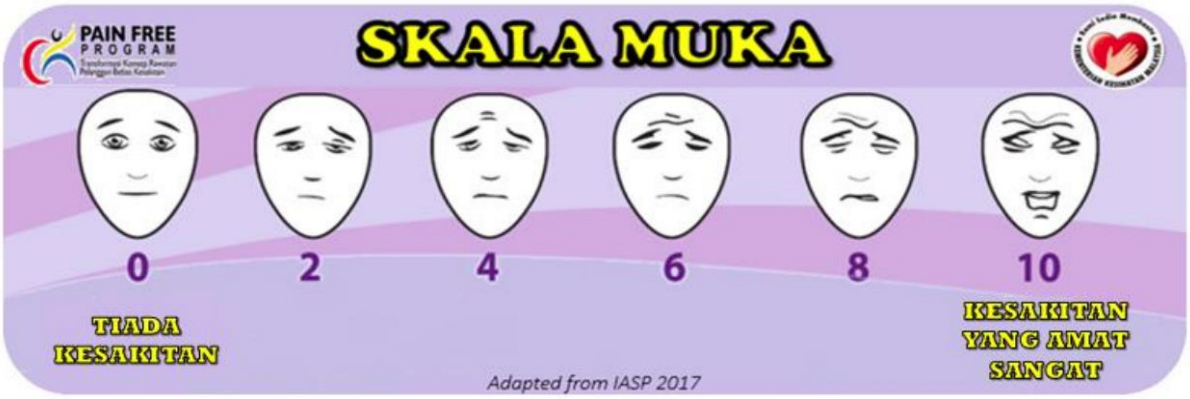
7.4.3 Example of Vertical Numerator Rating Scale



7.4.4 Example of Verbal Descriptor Scale

0	2	4	6	8	10
No pain	Mild	Moderate	Severe	Extreme	Worst pain





7.5.1 The McGill pain questionnaire

Overview: The McGill Pain Questionnaire can be used to evaluate a person experiencing significant pain. It can be used to monitor the pain over time and to determine the effectiveness of any intervention. It was developed at by Dr. Melzack at McGill University in Montreal Canada and has been translated into several languages.

Sections:

(1) What Does Your Pain Feel Like?

(2) How Does Your Pain Change with Time?

(3) How Strong is Your Pain?

What Does Your Pain Feel Like?

Statement: Some of the following words below describe your present pain. Circle ONLY those words that best describe it. Leave out any category that is not suitable. Use only a single word in each appropriate category - the one that applies best.

Group	Descriptor	Points
1 (temporal)	flickering	1
	quivering	2
	pulsing	3
	throbbing	4
	beating	5
	pounding	6
2 (spatial)	jumping	1
	flashing	2
	shooting	3
3 (punctate pressure)	pricking	1
	boring	2
	drilling	3
	stabbing	4
	lancinating	5
4 (incisive pressure)	sharp	1
	cutting	2
	lacerating	3

5 (constrictive pressure)	pinching	1
	pressing	2
	gnawing	3
	cramping	4
	crushing	5
6 (traction pressure)	tugging	1
	pulling	2
	wrenching	3
7 (thermal)	hot	1
	boring	2
	scalding	3
	searing	4
8 (brightness)	tingling	1
	itchy	2
	smarting	3
	stinging	4
9 (dullness)	dull	1
	sore	2
	hurting	3
	aching	4
	heavy	5
10 (sensory miscellaneous)	tender	1
	taut	2
	rasping	3
	splitting	4
11 (tension)	tiring	1
	exhausting	2
12 (autonomic)	sickening	1

	suffocating	2
13 (fear)	fearful	1
	frightful	2
	terrifying	3
14 (pinishment)	punishing	1
	gruelling	2
	cruel	3
	vicious	4
	killing	5
15 (affective-evaluative-sensory: miscellaneous)	wretched	1
	blinding	2
16 (evaluative)	annoying	1
	troublesome	2
	miserable	3
	intense	4
	unbearable	5
17 (sensory: miscellaneous)	spreading	1
	radiating	2
	penetrating	3
	piercing	4
18 (sensory: miscellaneous)	tight	1
	numb	2
	drawing	3
	squeezing	4
	tearing	5
19 (sensory)	cool	1
	cold	2
	freezing	3

20 (affective-evaluative: miscellaneous)	nagging	1
	nauseating	2
	agonizing	3
	dreadful	4
	torturing	5

pain score = SUM(points for applicable descriptors)

How Does Your Pain Change with Time?

Question	Response	Points
Which word or words would you use to describe the pattern of your pain?	continuous steady constant	1
	rhythmic periodic intermittent	2
	brief momentary transient	3

Do the following items increase or decrease your pain?

(1) liquor

(2) stimulants such as coffee

(3) eating

(4) heat

(5) cold

(6) damp

(7) weather changes

(8) massage or use of a vibrator

(9) pressure

(10) no movement

(11) movement

(12) sleep or rest

(13) lying down

Which word describes the worst toothache you ever had?	mild	1
	discomforting	2
	distressing	3
	horrible	4
	excruciating	5
Which word describes the worst headache yo ever had?	mild	1
	discomforting	2
	distressing	3
	horrible	4
	excruciating	5
Which word describes the worst stomach-ache you ever had?	mild	1
	discomforting	2
	distressing	3
	horrible	4
	excruciating	5

Interpretation:

• minimum pain score: 0 (would not be seen in a person with true pain)

• maximum pain score: 78

• The higher the pain score the greater the pain.

7.5.2 Pain assessment in advanced dementia tool (PAINAD)

ITEM	0	1	2	Score
Breathing independent of vocalization	Normal	Occasional labored breathing. Short period of hyperventilation	Noisy labored breathing. Long period of hyperventilation. Cheyne-stokes respirations	
Negative vocalization	None	Occasional moan or groan. Low-level of speech with a negative or disapproving quality	Repeated troubled calling out. Loud moaning or groaning. Crying.	
Facial expression	Smiling or inexpressive	Sad, frightened, frown	Facial grimacing	
Body language	Relaxed	Tense. Distressed pacing. Fidgeting	Rigid. Fists clenched. Knees pulled up. Pulling or pushing away. Striking out	
Consolability	No need to console	Distracted or reassured by voice or touch	Unable to console, distract or reassure	
TOTAL*				

*Total scores range from 0 to 10 (based on a scale of 0 to 2 for 5 items)

Obtained scores are NOT TO BE USED to inter absolute pain intensity i.e. a score of 10 on the PAINAD is not necessarily equal to an NPS rate of 10 (severe pain). Instead, compare the total score to the previous score received. An increased score suggests increase in pain, while a lower a score suggests pain is decreased.

8.0 REFERENCE

1. Department of Statistics Malaysia, 2017
2. National Health & Morbidity Survey 2006 (NHS III), National Institute Of Health Malaysia 2006
3. Alan D. Kaye et al. Pain Management in the Elderly Population: A Review. Ochsner J. 2010 Fall; 10(3): 179–187
4. Lily RMZ, Noran NH. Chronic pain in Asian adults: definition, measurement strategy and prevalence. 1st Asia Pacific clinical epidemiology & evidence based medicine. 2012.
5. Denard et al., 2010; Donald & Foy, 2004; Mailis-Gagnon, Nicholson, Yegneswaran, & Zuroqski, 2008 Overview of persistent pain in older adult
6. British Geriatric Society (BGS) Age and Ageing 2013; 42: i1–i57 doi: 10.1093/ageing/afs20
7. American Geriatrics Society Panel on the Pharmacologic Management of Persistent Pain in Older Persons. J Am Geriatr Soc 2009;57(8):1331-1346
8. British Geriatrics Society. Guidance on the Management of Pain. Age and Ageing 2013; 42:i1-i57
9. Lints-Martindale AC et al. A comparative investigation of observational pain assessment tools for older adults with dementia Clin J Pain. 2012 Mar;28(3):226-37
10. Una E Makris et al. Management of Persistent Pain in the Older Patient A Clinical Review. JAMA 2014; 312(8):825-836
11. Pat Schofield. The Assessment of pain in Older People: UK National GuidelinesAge and Ageing 2018; 47:i1-i22
12. Warden V et al, Development and psychometric evaluation of the Pain Assessment in Advanced Dementia (PAINAD) scale. J Am Med Dir Assoc. 2003;4(1):9
13. Chibnall JT et al, Pain assessment in cognitively impaired and unimpaired older adults: a comparison of four scales. Pain. 2001 May;92(1-2):173-86.
14. Alan D Kaye et al, Pain Management in the Elderly Population: A Review. The Ochsner Journal 2010; 10:179-187
15. R Morgan Bain. Principles of Pain Management. Fundamentals of Geriatric Medicine. A Case Based Approach. 2007 Springer Science+Business Media
16. The management of persistent pain in older persons. AGS Panel on Persistent Pain in Older Persons. J Am Geriatr Soc. 2002;50 (6 Suppl):S205
17. Andrade D C et al, The assessment and management of pain in the demented and non-demented elderly patient. Arq Neuropsiquiatr. 2011;69(2B):387-94.
18. Hazzard's Geriatric Medicine and Gerontology. Bruce A Ferrel et al, Pain Management. Page 359.2009. The McGraw-Hill Companies
19. Monica M t al, Pain Management in the Elderly. Med Clin N Am 2015; 99: 337-350
20. The Handbook of Geriatric Medicine. Koh WK. Pain Management in End of Life Care 2012
21. Pharmacological management of persistent pain in older persons. American Geriatrics Society Panel on Pharmacological Management of Persistent Pain in Older Persons. J Am Geriatr Soc. 2009;57(8):1331.
22. Coupland CA et al, A study of the safety and harms of antidepressant drugs for older people: a cohort study using a large primary care database. Health Technol Assess. 2011 Aug;15(28):1-202, iii-iv.
23. Heiskanen T et al, Transdermal fentanyl in cachectic cancer patients. Pain. 2009 Jul;144(1-2):218-22. Epub 2009 May 12
24. King S et al, A systematic review of the use of opioid medication for those with moderate to severe cancer pain and renal impairment: a European Palliative Care Research Collaborative opioid guidelines project. Palliat Med. 2011;25(5):525.

25. Graham GG, Davies MJ, Day RO, et al. The modern pharmacology of paracetamol: therapeutic actions, mechanism of action, metabolism, toxicity and recent pharmacological findings. Inflammopharmacology 2013;21:201–32.
26. American Geriatrics Society Panel on the Pharmacological Management of Persistent Pain in Older Persons. Pharmacological management of persistent pain in older persons. J Am Geriatr Soc 2009; 57: 1331–46.
27. Claridge LC, Eksteen B, Smith A, Shah T, Holt AP. Acute liver failure after administration of paracetamol at the maximum recommended daily dose in adults. Br Med J 2010; 341: c6764.
28. American Geriatrics Society Panel on the Pharmacological Management of Persistent Pain in Older Persons. Pharmacological management of persistent pain in older persons. J Am Geriatr Soc 2009; 57: 1331–46.
29. American Geriatrics Society Panel on the Pharmacological Management of Persistent Pain in Medicines and Healthcare products Regulatory Agency Safety of selective and non-selective NSAIDs. Available at http://www.mhra.gov.uk/home/groups/pl-p/documents/ websiteresources/con2025036.pdf (6 September 2012, date last accessed).
30. Nikolaus T, Zeyfang A. Pharmacological treatments for persistent non-malignant pain in older persons. Drugs Aging 2004; 21: 19–41.
31. Johnson AG, Nguyen TV, Day RO. Do nonsteroidal anti- inflammatory drugs affect blood pressure? A meta-analysis. Ann Int Med 1994; 121: 289–300.
32. British Pain Society. Opioids for persistent pain: Good Practice. London: The British Pain Society, 2010.
33. Pergolizzi J, Böger RH et al. Opioids and the management of chronic severe pain in the elderly: consensus statement of an International Expert Panel with focus on the six clinically most often used World Health Organization Step III opioids (buprenorphine, fentanyl, hydromorphone, methadone, morphine, oxycodone). Pain Pract 2008; 8: 287–313.
34. Won A, Lapane KL, Vallow S, Schein J, Morris JN, Lipsitz LA. Long-term effects of analgesics in a population of elderly nursing home residents with persistent nonmalignant pain. J Gerontol Med Sci 2006; 61A: 165–9.
35. Mercadante S, Ferrera P, Villari P, Casuccio A. Opioid escalation in patients with cancer pain: the effect of age. J Pain Sympt Manage 2006; 32: 413–9.
36. Vestergaard P, d Rejnmark L, Mosekilde L et al. Fracture risk associated with the use of morphine and opiates. J Int Med 2006; 260: 76–83.
37. Podichetty VK, Mazanec DJ, Biscup RS. Chronic non- malignant musculoskeletal pain in older adults: clinical issues and opioid intervention. Postgrad Med J 2003; 79: 627–33.
38. Mercadante S, Arcuri E. Pharmacological management of cancer pain in the elderly. Drugs Aging 2007; 24: 761–76.
39. Barber JB, Gibson SJ. Treatment of chronic non-malignant pain in the elderly: safety considerations. Drug Safety 2009; 32: 457–74.
40. Ackerman SJ, Knight T, Schein J, Carter C, Staats P. Risk of constipation in patients prescribed fentanyl transdermal system or oxycodone hydrochloride controlled-release in a California Medicaid population. Consult Pharm 2004; 19: 118–32.
41. Menten J, Desmedt M, Lossignol D, Mullie A. Longitudinal follow-up of TTS-fentanyl use in patients with cancer- related pain: results of a compassionate-use study with special focus on elderly patients. Curr Med Res Opin 2002; 18: 488–98].

42. Otis J, Rothman M. A Phase III study to assess the clinical utility of low-dose fentanyl transdermal system in patients with chronic non-malignant pain. Curr Med Res Opin 2006; 22: 1493–501.
43. Kress HG. Clinical update on the pharmacology, efficacy and safety of transdermal buprenorphine. Eur J Pain 2009; 13: 219–30.
44. Likar R, Vadlau EM, Breschan C, Kager I, Korak-Leiter M, Ziervogel G. Comparable analgesic efficacy of transdermal buprenorphine in patients over and under 65 years of age. Clin J Pain 2008; 24: 536–43.
45. Brown JP, Boulay LJ. Clinical experience with duloxetine in the management of chronic musculoskeletal pain. A focus on osteoarthritis of the knee. Ther Adv Musculoskelet Dis 2013;5(6):291–304; Smith T, Nicholson RA. Review of duloxetine in the management of diabetic peripheral neuropathic pain. Vasc Health Risk Manag 2007;3(6):833–44; Wright CL, Mist CD, Ross RL, et al. Duloxetine for the treatment of fibromyalgia. Expert Rev Clin Immunol 2010;6(5):745–56.
46. Jean WH, Wu CC, Mok MS, Sun WZ. Starting dose of gabapentin for patients with post-herpetic neuralgia—a dose-response study. Acta Anaesthesiol Taiwan 2005; 43: 73–7.
47. Baron R, Mayoral V, Leijon G, Binder A, Steigerwald I, Serpell M. 5% lidocaine medicated plaster versus pregabalin in post-herpetic neuralgia and diabetic polyneuropathy: an open-label, non-inferiority two-stage RCT study. Curr Med Res Opin 2009; 25: 1663–76.
48. National Institute for Health and Clinical Excellence. Clinical guideline for the pharmacological management of neuropathic pain in the non-specialist setting. Clinical Guideline 96. Available at <http://guidance.nice.org.uk/ CG96> (25 August 2012, date last accessed).
49. Backonja M, Wallace MS, Blonsky ER et al. NGX-4010, a high-concentration capsaicin patch, for the treatment of postherpetic neuralgia: a randomised, double-blind study. Lancet Neurol 2008; 7: 1106–12.
50. Ozyalcin NS. Minimal invasive treatment modalities for geriatric pain management. Agri 2004; 16: 26–36.
51. Freedman GM. Chronic pain. Clinical management of common causes of geriatric pain. Geriatrics 2002; 57: 36–41.
52. Jinks C, Jordan K, Croft P. Osteoarthritis as a public health problem: the impact of developing knee pain on physical function in adults living in the community: (knest 3). Rheumatology 2007; 46: 877–81.
53. Godwin M, Dawes M. Intra-articular steroid injections for painful knees. Systematic review with meta-analysis. Can Fam Physician 2004; 50: 241–8.
54. Arroll B, Goodyear-Smith F. Corticosteroid injections for osteoarthritis of the knee: meta-analysis. BMJ 2004; 328: 869.
55. Bellamy N, Campbell J, Robinson V, Gee TL, Bourne R, Wells G. Intraarticular corticosteroid for treatment of osteoarthritis of the knee. Cochrane Database Syst Rev 2005; 2:CD005328.
56. Pyne D, Ioannou Y, Mootoo R, Bhanji A. Intra-articular steroids in knee osteoarthritis: a comparative study of triamcinolone hexacetonide and methylprednisolone acetate. Clin Rheumatol 2004; 23: 116–20.
57. Lo GH, LaValley M, McAlindon T, Felson DT. Intra-articular hyaluronic acid in treatment of knee osteoarthritis: a meta-analysis. JAMA 2003; 290: 3115–21

58. Aggarwal A, Sempowski I. Hyaluronic acid injections for knee osteoarthritis. Systematic review of the literature. Can Fam Physician 2004; 50: 249–56.
59. Wang C-T, Lin J, Chang C-J, Lin Y-T, Hou S-M. Therapeutic effects of hyaluronic acid on osteoarthritis of the knee. A meta-analysis of randomized controlled trials. J Bone Joint Surg Am 2004; 86: 538–45.
60. Bellamy N, Campbell J, Welch V, Gee TL, Bourne R, Wells GA. Viscosupplementation for the treatment of osteoarthritis of the knee. Cochrane Database Syst Rev 2006; 2: CD005321.
61. Divine JG, Zazulak BT, Hewett TE. Viscosupplementation for knee osteoarthritis: a systematic review. Clin Orthop Relat Res 2007; 455: 113–22.
62. Zhang W, Moskowitz RW, Nuki G et al. OARSI recommendations for the management of hip and knee osteoarthritis, Part II: OARSI evidence-based, expert consensus guidelines. Osteoarthritis Cartilage 2008; 16: 137–62.
63. Jordan KM, Arden NK, Doherty M et al. EULAR Recommendations 2003: an evidence-based approach to the management of knee osteoarthritis: Report of a Task Force of the Standing Committee for International Clinical Studies Including Therapeutic Trials (ESCISIT). Ann Rheum Dis 2003; 62: 1145–55.
64. van den Bekerom M, Lamme B, Sermon A, Mulier M. What is the evidence for viscosupplementation in the treatment of patients with hip osteoarthritis? Systematic review of the literature. Arch Orthop Trauma Surg 2008; 128: 815–23.
65. Arrich J, Piribauer F, Mad P, Schmid D, Klaushofer K, Mullner M. Intra-articular hyaluronic acid for the treatment of osteoarthritis of the knee: systematic review and meta-analysis. CMAJ 2005; 172: 1039–43.
66. Modawal A, Ferrer M, Choi HK, Castle JA. Hyaluronic acid injections relieve knee pain. J Fam Pract 2005; 54: 758–67.
67. Kahan A, Lleu P-L, Salin L. Prospective randomized study comparing the medicoeconomic benefits of hylan gf-20 vs. Conventional treatment in knee osteoarthritis. Joint Bone Spine 2003; 70: 276–81.
68. Bowsher D. The lifetime occurrence of herpes zoster and prevalence of post-herpetic neuralgia: a retrospective survey in an elderly population. Eur J Pain 1999; 3: 335–42.
69. Kost RG, Straus SE. Postherpetic neuralgia: pathogenesis, treatment, and prevention. N Eng J Med 1996; 335: 32–42.
70. Colding A. Treatment of pain: organization of a pain clinic: treatment of acute herpes zoster. Proc R Soc Med 1973; 66: 541–3.
71. Hardy D. Relief of pain in acute herpes zoster by nerve blocks and possible prevention of post-herpetic neuralgia. Can J Anesth 2005; 52: 186–90.
72. Tenicela R, Lovasik D, Eaglstein W. Treatment of herpes zoster with sympathetic blocks. Clin J Pain 1985; 1: 63–8.
73. Pasqualucci A, Pasqualucci V, Galla F et al. Prevention of post-herpetic neuralgia: acyclovir and prednisolone versus epidural local anesthetic and methylprednisolone. Acta Anaesthesiol Scand 2000; 44: 910–8.
74. Kotani N, Kushikata T, Hashimoto H et al. Intrathecal methylprednisolone for intractable postherpetic neuralgia. N Eng J Med 2000; 343: 1514–9.

75. van Wijck A, Opstelten W, Moons K et al. The pine study of epidural steroids and local anaesthetics to prevent post- herpetic neuralgia: a randomised controlled trial. Lancet 2006; 367: 219–24.
76. Kumar V, Krone K, Mathieu A. Neuraxial and sympathetic blocks in herpes zoster and postherpetic neuralgia: an appraisal of current evidence. Reg Anesth Pain Med 2004; 29: 454–61.
77. Kim YH, Lee CJ, Lee SC et al. Effect of pulsed radiofrequency for postherpetic neuralgia. Acta Anaesthesiol Scand 2008; 52: 1140–3.
78. Freund B, Schwartz M. Subcutaneous btx-a in the treatment of neuropathic pain: A pilot study. Presented at the 38th Interagency Botulism Research Coordinating Committee Meeting, October 17–19 2001 Easton, MD.
79. Argoff CE. A focused review on the use of botulinum toxins for neuropathic pain. Clin J Pain 2002; 18: S177–81.
80. Ranoux D, Attal N, Morain F, Bouhassira D. Botulinum toxin type a induces direct analgesic effects in chronic neuropathic pain. Ann Neurol 2008; 64: 274–83.
81. Una E. Makris. Management of Persistent Pain in the Older Patient: A Clinical Review. JAMA 2014;312 825-836


PAIN FREE
PROGRAM
Tranformasi Konsep Rawatan
Pelanggan Bebas Kesakitan