

The elderly with a fractured hip – analgesia

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Introduction

The rate of patients with hip fractures is increasing every decade¹ with the numbers expected to double from 2.2 million to 4.5 million between the years 2017 and 2050.² The elderly population represents the majority of these patients. The incidence rises exponentially with age,³ with females being more affected than males due to Osteoporosis.⁴ Almost 30% of these elderly patients suffer from some form of cognitive dysfunction⁵ and other comorbidities like hypertension, diabetes, and cardiac diseases, which have been increasing over the years.¹ It must be borne in mind that the fall leading to the hip fracture might be caused by an acute cardiac or neurological event. Overall, hip fractures are associated with poor outcome with 5% of patients dying during their hospitalisation⁴ and up to 10% within 30 days of the hip fracture.^{4,6} Pre-existing medical conditions are the cause of death in 75% of the patients rather than the fracture itself.¹ Treatment is either by immobilization with skin traction which is becoming more and more rare, with the majority of patients receiving open reduction with internal fixation or hip arthroplasty. Mortality rate in hip arthroplasties is significantly higher where the indication for surgery is a fracture, compared to those patients who need elective hip replacements for chronic arthritic conditions, with men having a higher mortality than women.¹

The anaesthetic role should ideally start preoperatively, with optimising the patient for surgery, along with assessing and managing pain, continuing intraoperatively, and extending into the post-operative period.

Pain assessment

Pain is subjective and health care practitioners depend on patients to report their pain, verbally in most instances. This presents a challenge in patients with cognitive dysfunction who might have difficulty in expressing themselves. The Universal Pain Assessment Tool (Figure 1) which is a commonly used pain assessment scale is very useful, but poses a challenge in the cognitively impaired. Cognitive impairment and communication difficulties are stated as the most common barriers to appropriate provision of analgesia in the elderly.⁶ Fortunately, there are a number of pain assessment tools currently available for those patients with cognitive impairment that can aid in this regard. One of the scales that can be used is the Pain Assessment in Advanced Dementia (PAINAD) score⁷ which is graded from 0 to 10 and simplifies managing this potentially challenging group of patients (Table 1).

Pain management

Following a hip fracture, pain is amongst the major physiological stressors that patients will face together with the blood loss associated with surgery.⁸ Inappropriate management of these physiological stressors is associated with significant morbidity and mortality. Appropriate analgesics not only aid in nursing care of the patients but also in positioning during the imaging studies which are mandatory before surgery. Thus, it is important to administer appropriate forms of analgesia in all patients with suspected hip fracture as soon as they arrive in a hospital setting. In fact, analgesics should be instituted before the patients are transferred to a health care facility. This has mainly been through

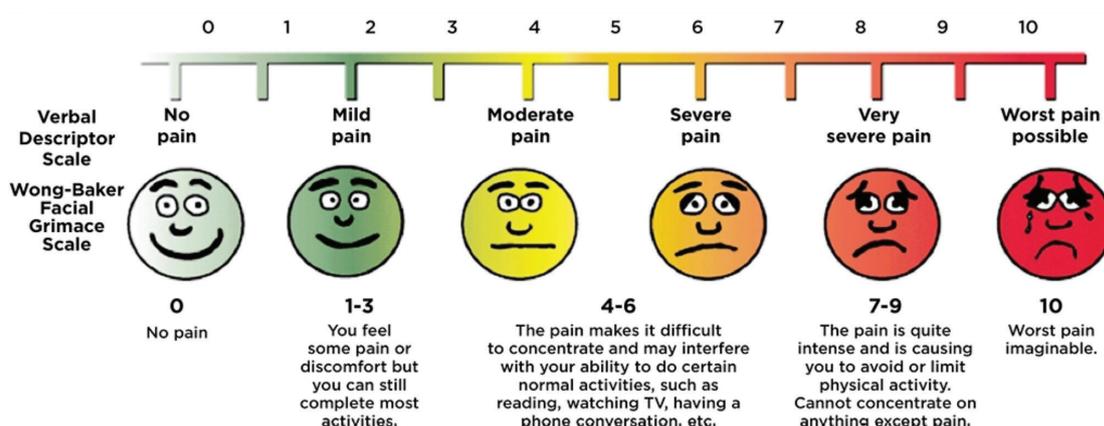


Figure 1. Universal pain assessment tool

Table 1. PAINAD scale

Pain Assessment in Advanced Dementia (PAINAD)				
	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 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

opioids which are either given orally or parenterally, but this approach is suboptimal³ and is associated with considerable morbidity. Most guidelines recommend the use of paracetamol, opioids and the avoidance of nonsteroidal anti-inflammatory drugs (NSAIDs) because of their side effect profile, especially in this patient population, with peripheral nerve blockade being an optional extra provided the prior modalities are inadequate.⁹

Treatment options

It is well established that pain itself is a multifactorial phenomenon involving both the peripheral and central nervous system with multiple pain pathways contributing to the ultimate perception of pain.³ Treatment therefore should follow this pattern and target the multiple implicated areas through multimodal analgesia. A comprehensive approach would involve targeting pain at tissue level, the peripheral and central nervous systems. This could be achieved with common analgesics like paracetamol, NSAIDs, opioids, local anaesthetics, and the less commonly used drugs like alpha-2-agonists, N-methyl-D-aspartate (NMDA) antagonists, anticonvulsants and antidepressants.³ It is difficult to achieve optimal pain relief using a single drug without significant side effects, hence the combination of different drugs at lower doses, for their additive and synergistic effects.¹⁰

Recently, there is an increase in the use of peripheral nerve blockade throughout the perioperative period.¹¹ This includes, but is not limited to, femoral nerve and fascia iliaca blocks for patients with hip fractures. Neuraxial blocks are also an option, with the setback for intrathecal injections being motor blockade and the need for intensive monitoring, which makes titrated epidural injections more desirable, especially because their use can extend into the postoperative period. Regional anaesthesia has a myriad of advantages, which include less sedation resulting in patients being more cooperative, further aiding postoperative rehabilitation. Motor blockade with peripheral nerve blockade can pose a challenge to postoperative mobilisation. However, this can be minimised by the use of lower local anaesthetic drug concentrations. Pure sensory nerve block like the lateral femoral cutaneous nerve block does preserve motor function, but alone it is inadequate to treat hip fracture pain.

Unfortunately there is limited evidence comparing the different pain management interventions that are currently available in terms of effectiveness, benefits and adverse events.¹²

Conclusion

In a nutshell, it must be acknowledged that hip fractures are painful. Patient profile, especially the impaired cognition aspect, may make it difficult to assess this, but it is the health care providers' responsibility to equip themselves with at least one pain assessment tool for this population group. With the array of treatment options available, pain associated with hip fracture and its surgery is manageable. Adequate pain management spanning from preoperatively through to the rehabilitation period avoids cardiopulmonary and mental state complications, restoring ambulation and independence.¹² Above all, adequately treating pain is a humanitarian obligation.

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