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Pain Management in the ICU

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This article reviews the need to improve pain management for ICU patients. Regular evaluation of pain using scales adapted to the patients level of consciousness is the primary step towards such improvement.

Patients admitted to the intensive care unit (ICU) are likely to experience pain during their stay. The Study to Understand Prognoses and Preferences for Outcomes and Risks of Treatment (SUPPORT) reported pain in 50% of seriously ill patients and severe pain in 15% of them (Desbiens et al. 1996). These patients experience pain and anxiety related to a number of factors, including underlying diseases, invasive procedures, therapeutic devices, immobility and even routine nursing care, such as mobilisation, airway suctioning and physical therapy. Moreover, patients in the ICU may be at particular risk for poor pain management, since little is known about pain assessment and control in these patients.

Appropriate alleviation of pain begins with the use of effective strategies for recognizing, evaluating and monitoring pain. Improvement in pain documentation indeed leads to improvements in pain management. The Joint Commission for the Accreditation of Healthcare Organisations (JCAHO) has developed standards on pain assessment and management (www.jcaho.org). Guidelines from the Society of Critical Care Medicine (SCCM) recommend pain assessment followed by therapeutic response, using a scale appropriate to the patient population and regular pain documentation (Jacobi et al. 2002). However, documenting pain is difficult in the ICU, because most patients cannot express their pain, and the validity of a sedated patient's elicited response about pain is questionable.

Accurate assessment of pain in critically ill patients is a challenging but essential component of quality of care. To date, few studies have analysed pain assessment in critical care units. Pain assessment studies in critical care settings may be difficult to conduct, because pain assessments are often inadequately documented. Inadequate documentation may be caused by a failure to understand the importance of using a standard measure to document patients' pain, a lack of consistently available tools, such as cards to measure pain scores, and practitioners' failure to report pain scores.

The most accurate and valid indicator of pain is the patient's self-report (Acute Pain Management Guideline Panel 1992). Assessment of pain intensity may be performed with multidimensional or unidimensional tools. Multidimensional tools, such as the McGill Pain Questionnaire (MPQ) and the Wisconsin Brief Pain Questionnaire (BPQ), measure pain intensity and sensory, affective and behavioural components of that pain. These tools have not been evaluated in the ICU and may not be practical for ICU patients. Unidimensional tools, such visual analogue scale (VAS), verbal rating scale (VRS) and numeric rating scale (NRS), may be useful when the patient is able to communicate. VAS is reliable, valid and used frequently in the ICU, but has not been specifically tested in the ICU environment (Ho et . 1996). VAS also has limits, particularly in elderly patients or those with cognitive dysfunction (Puntillo 1994). NRS is valid in acute care settings, correlates with VAS and is applicable in many age groups. Because the most reliable indicator of pain intensity is the patient's self-report, the SCCM recommends the use of NRS to assess pain in critically ill patients (Jacobi et al. 2002).

Often in the ICU, however, patients are unable to communicate clearly about their pain. When patients cannot communicate and are thus unable to self-report pain intensity, assessments must be based upon observation of pain indicators. It is important to note that changes in physiologic variables in response to a nociceptive action are non-specific and may be affected by medications. The Behavioural Pain Scale (BPS) has recently been validated as a tool for pain assessment in sedated and mechanically ventilated patients and has been found easy to use (Payen et al. 2001).

It should be noted that pain and agitation may be linked but generally have different causes. Pain and agitation, therefore, require different methods of assessment. Although agitation can be caused by pain, it is more often associated with factors such as extreme anxiety, delirium or adverse drug effects. The Riker Sedation- Agitation Scale (SAS) is a reliable tool for scoring the level of consciousness and agitation in critically

ill adults, using a seven-item list describing patient behaviours (Riker et al. 1999). The Riker SAS is extremely useful for evaluating the patient's level of consciousness and guiding sedation, but should not be used to evaluate the pain level or to guide analgesia in sedated patients.

The use of a detailed, standardised pain assessment and intervention algorithm that incorporates behavioural and physiological indicators may assist healthcare professionals in providing adequate pain therapy. There are very few research papers dedicated to pain therapy ICU patients. In deeply sedated patients, high doses of opioids usually form the basis for pain treatment, while in less sedated or awake patients, a multimodal approach, similar to what is used in postoperative patients, can be proposed. In most ICU patients however, non-steroidal, anti-inflammatory drugs cannot be used, due to the risk of aggravation in patients with haemodynamic instability, renal dysfunction or uncontrolled infection. Regional anaesthesia (epidural analgesia or peripheral nerve blocks) can be used in selected cases, as discussed in a previous issue of this journal (Casati et al. 2005). Dosages of other systemically administered analgesics should be adapted individually according to the nature and severity of organ failures (Murphy 2005). Paracetamol half-life is prolonged only in patients with extreme renal dysfunction, while nefopam dosing intervals should be increased in patients with moderate renal dysfunction. Opioid scheduling should be adapted to the underlying degree of respiratory distress, while morphine itself should not be used as the first choice agent in patients with renal dysfunction (Mercadante and Arcuri 2004).

In conclusion, pain management is an essential component of quality care delivery for the critically ill patient. High quality pain management and palliative therapy should be a goal for every patient. Improvement in pain management requires improvement in pain assessment, and it is difficult to evaluate and improve performance without using a standard metric for pain. In order to optimise pain management in a critical care setting, ICU staff need to conduct repeated, standard pain score measures that are appropriate for critically ill patients. Based on these measures, ICU staff should follow appropriate analgesic protocols for all patients.

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