



- **FACT SHEET No. 11**

## **Pain Management in Postsurgical Intensive Care**

Several million patients worldwide transit through Intensive Care Units (ICU) every year, of which around one-third are admitted to Surgical Intensive Care Units (SICU) after an elective or emergency surgical procedure [11].

For many years, mortality or survival rates have dominated outcome measures for critical care. Recently, patient-centered outcomes have become increasingly important. Long-term outcomes investigated after ICU stays include quality of life, functional capacity, and psychological factors. Further, chronic pain after ICU stay is now considered to be a major outcome measure, as pain seriously affects the patient's quality of life and may interfere with recovery of functional capacity.

### **Acute Pain in SICU Adult Patients**

- Most SICU patients experience pain either from their illness or injury or from procedures performed by ICU clinicians. Acute pain has emerged as a leading stressor for ICU patients [2,3], causing physical stress, sleep disturbances, and psychological distress, all which may affect the quality of life after ICU discharge [10].
- Slightly more than one-half of ICU patients report acute pain of moderate to severe intensity with a median NRS (Numeric Rating Scale) rating for the self-reporting surgical patients of 5.0 (4.3 – 6.0) when at rest during their stay [3]. Chest tube removal, wound drain removal, and arterial line insertion are the most painful procedures reported by ICU patients [8].

### **Acute Pain Assessment and Management in ICU Patients**

- Several studies have clearly demonstrated the benefits of assessing pain and sedation in all ICU patients, including mechanically ventilated patients, in terms of a patient's recovery and economic impact. These benefits include reduction in duration of ventilator support, duration of ICU stay, and decreased need for hypnotic drugs when pain is assessed [6].
- However, a substantial number of patients who are mechanically ventilated are unable to report their pain because of concomitant use of sedative drugs or their illness (e.g., brain injury).

- Management of sedation and analgesia (“analgo-sedation”) with established protocols allows early mobilization, which is associated with better outcomes in SICU patients: fewer hospital and ICU days and better functional mobility at hospital discharge [5,6].
- The use of multimodal analgesia techniques is recommended in ICU patients to reduce opioid administration, thereby minimizing problems related to prolonged use of high doses of opioids such as tolerance, hyperalgesia, and withdrawal [9].

### Chronic Pain and Decreased Quality of Life After SICU Stay

- More than one-half of patients who survived SICU admission report decreased health-related quality of life at six years and later: 52 percent have problems with mobility and daily activity; 43 percent mention cognitive problems; and 57 percent report pain and discomfort [10]. In a recent observational study in a mixed medical-surgical ICU, 16 percent of patients with no preexisting pain condition experienced chronic ICU-related pain at six months after discharge [1].
- The risk factors for chronic ICU-related pain are not well established and deserve further well-designed prospective studies. The presence of sepsis seems to play a marginal role [1], and chronic postsurgical pain might be a model for identifying the risk factors for chronic pain after ICU [9]. Both the severity of acute pain and time spent in severe pain after surgery are risk factors for the development of chronic postsurgical pain [4]. Similarly, undermanaged pain during SICU stay should be a risk factor for pain persistence after discharge. For example, patients interviewed three to 16 months after hospitalization who were having current pain recalled greater ICU procedural pain intensity and pain distress than patients without current pain. In contrast, ICU length of stay, emergency admission, and use of mechanical ventilation do not seem to influence long-term quality of life [10].
- Perioperative opioid administration often relieves patient pain. However, opioids not only can induce well-known side effects but also may induce dependence and long-term use in patients. To date, iatrogenic opioid dependence after ICU stay and its impact on a patient’s recovery have received little interest but certainly deserve greater attention [9].

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