The role of Sufentanil in intensive care unit

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Dear Editor,

The problem of analgosedation in Intensive Care Units is as old as the Intensive Care Unit itself, but it is only in recent years that the importance of the "fifth vital parameter" in terms of association has been recognized not only as immediate complications such as agitation and delirium but also in the long term with post-traumatic stress disorder, chronic pain, and reduced quality of life after discharge, so much so as to recognize the need to adopt pain and agitation control scales even in non-communicating patients or patients with altered mental status.[1]

The ideal drug should respond to these needs, have a rapid offset/onset, have a wide therapeutic range, avoid accumulation effects, not be at high allergenic risk, liable to continuous infusion, not affect the circadian sleep/wake rhythm, promote early mobilization and not interact with other drugs.[2]

Historically, opiates have been widely used in intensive care because of their pharmacokinetic and pharmacodynamic characteristics.

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The clinical utility of opioids in the management of pain cannot be denied. However, their use comes with potential problems, including nausea and vomiting, respiratory depression, physical dependence and addiction, with the advocation for multimodal regimes.[3]

Despite these concerns, old and new drugs have failed to completely replace opiates in ICUs.[4] Injecting paracetamol is associated with hypotension, ketamine allows excellent deep analgosedation but is difficult to titrate and is associated with hallucinations and delirium, dexdemedetomidine, a highly selective α-2 adrenergic agonist that exhibits hypnotic, is a new and promising drug but has an eminently sedative action and is not free of complications.

The 21-bed ICU at Maurizio Bufalini Hospital in Cesena, Italy, is a closed, tertiary-level unit that offers all standard critical care therapies, including Trauma care and Neurocritical care. It is part of a 600-bed, university-affiliated hospital that offers a comprehensive range of medical and surgical specialties, including neurosurgery. As it is easy to see, a large number of patients of considerable heterogeneity are involved. In order to meet the challenge of offering adequate analgesic therapy, we have decided to choose Sufentanil as our first choice because of its specific features.

Sufentanil is a potent opioid analgesic, a thienylderivate of fentanyl, that was first synthesized in the early 1970s.[5] Faster than morphine, more potent than Fentanyl, without the disadvantages of Remifentanil (post-suspension hyperalgesia), it lends itself to both prolonged cruise control infusions and extemporaneous sedation for invasive procedures, allows adequate neurological assessment and does not excessively alter electroencephalographic measurements. Despite its beneficial profile there is still a paucity of literature on the use of Sufentanil in ICUs.

In an elegant review Maciejewski[6] recognizes not only its effective analgesia but also its favorable effects on hemodynamics, lower respiratory depression compared to other opioids and also economic advantages. It seems to have a protective role on the central nervous system and its influence on the cerebral flow is less manifested, compared to fentanyl.

Therefore, we can only hope that future research will be oriented towards multimodal strategies to assess an adequate pain control with the effective combination of Sufentanil with other classes of drugs in ICUs.

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