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In 2008, the French Society of Anaesthesia and Intensive Care Medicine (SFAR) and the French Intensive Care Society (FICS/SRLF) published a consensus statement regarding sedation practices for Intensive Care Unit (ICU) patients [1]. The American College of Critical Care Medicine (ACCM) in conjunction with the Society of Critical Care Medicine (SCCM) have recently published new clinical practice guidelines in September 2018 [2], updating their previous recommendations published in 2013 [3]. We have had the great honour to take part as experts in the elaboration of the 2008 and 2018 guidelines, and wish to highlight the revolution in sedation practices stimulated by these guidelines for 10 years.

1. Sedation and analgesia in intensive care

The key points of the 2008 French consensus [1] were:

- defining goals of sedation and promoting light to moderate levels of sedation;
- distinguishing between analgesia and sedation (Fig. 1).

It is now established that a deep level or a prolonged sedation is associated with a longer duration of mechanical ventilation [4], a longer stay in the intensive care unit (ICU) and hospital [4], a higher rate of health care related infections [5], and even a higher mortality rate according to a recent meta-analysis [6]. This 2008 consensus stated the importance to differentiate the comfort sedation (light to moderate sedation level) from the therapeutic sedation (deep sedation level). The latter aimed at reaching a complete relaxation that must be reserved only to selected critical situations, i.e. in the case of severe acute respiratory failure and severe brain injury. In the other situation, the sedation level should provide the best comfortable conditions to get a calm, awake and cooperative critically ill patient.

An important step toward the promotion of light sedation was provided by the distinction between sedation and analgesia. Pain management was detailed in this 2008 consensus [7], by contrast with previous guidelines [8,9]. This was due to the elaboration of new clinical pain instruments for non-verbal ICU patients or ICU patients suffering from weakness and fatigability [10–12]. Pain was identified as a frequent experience in surgical, trauma and medical ICUs, at rest and during painful procedures [13,14]. An association between the quality of pain management and outcomes such as agitation, duration of mechanical ventilation, and length of stay in ICU was found [11,15]. Efforts to a better pain management coincided with calls to reduce the use of hypnotics (sedatives) [4,11].

2. Management of pain, agitation, and delirium in adult patients in the ICU

The key points of the 2013 US guidelines [3] were:

- focusing on symptoms instead of treatments;
- adding delirium as a major issue to diagnose and treat.

(Fig. 1) The term “sedation/analgesia” was changed to “management of pain and agitation” that underscored recognising these symptoms (pain, agitation) in each critically ill patient regardless the presence of a tracheal tube or the level of sedation. Consequently, this allows moving to light sedation further away, while taking care of sources of discomfort using a rationale approach to manage each discomfort symptom and to avoid deep sedation. Pain was mentioned for the first time in the title of these guidelines, and a large attention was paid on pain treatment as the first step prior to considering an increase of sedatives.

Delirium was introduced in these 2013 guidelines due to an association between ICU delirium and long-term cognitive dysfunction [16], to an interaction between delirium, agitation and sedation [4,17], and to the validation of clinical instruments to assess delirium [18]. Delirium may be a cause of agitation in ICU patients although a large part of delirious patients are hypoactive. Among risk factors associated with delirium, one of them is probably related to the use of sedatives, in particular benzodiazepines [19]. Consequently, it was stated that delirium might not be treated with benzodiazepines, except the alcohol withdrawal syndrome, and that benzodiazepines might be avoided in ICU patients. Dexmedetomidine and propofol appeared to be preferable alternatives to benzodiazepines. Another point was the

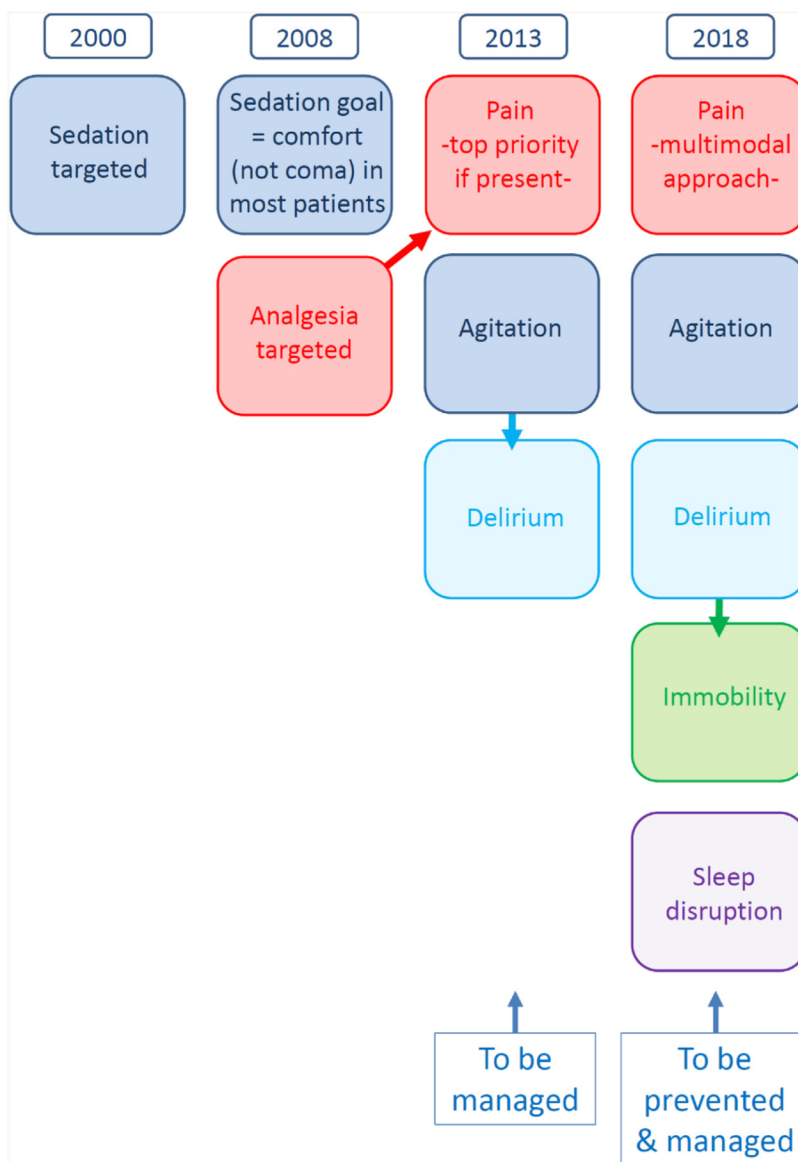


Fig. 1. Revolution of French and American sedation practice guidelines in intensive care adult patients for the past 10 years.

recommendation of an early active mobilisation program. This was in line with the reduction of sedation level to allow cooperative patients entering into an active mobilisation program. Early and active mobilisation might prevent delirium, suggesting a possible relation between issues (sedation/immobility/delirium) and solutions (awakening/active mobilisation).

3. Prevention and management of pain, agitation/sedation, delirium, immobility, and sleep disruption in adult patients in the ICU

The recently published guidelines [2] have been elaborated since 2014. The key points were:

- adding immobility and sleep disruption as specific disorders;
- promoting non-pharmacological interventions and multimodal analgesia;
- emphasising the prevention of symptoms;
- including experts from countries outside of North America.

(Fig. 1) Early mobilisation and quality of sleep were discussed in the 2013 guidelines. These notions appear as specific fields in the 2018 guidelines. In line with the rewording of “symptoms”, they were quoted as “immobility” and “sleep disruption”. There is a relationship between sedation/analgesia and immobility/sleep disruption: the deepest and/or the longest duration of sedation, the highest rate of ICU-related acquired weakness. In addition, many sedative drugs alter sleep pattern, and impact of these sleep alterations might be severe: sleep alteration and delirium are intertwined in a complex and not fully understood way. To prevent these consequences, recommendations favouring non-pharmacological interventions are proposed to improve sleep disruption, e.g. adjusting mechanical ventilation at night, and to reduce pain during procedures, e.g. relaxation therapy, massage, music therapy and cold therapy. The global idea was to develop strategies in order to prevent as much as possible the symptoms as well as the drug-related side effects that are frequent in critically ill patients. Multimodal analgesia including non-opioid analgesics is promoted for the first time in the 2018 guidelines, in the aim to improve pain management and to reduce the use of opioids.

Finally, the expert panel included for the first time experts from diverse countries: USA, Canada, Australia, The Netherlands, and France, in order to reach a more global consensus. For example, fentanyl, a low-cost non-opioid analgesic available worldwide except USA and Canada, has been suggested as an alternative or adjunct to reduce opioid doses.

Overall, the sedation/analgesia guidelines for ICU adult patients have been gradually improved since 2008 in order to decrease the requirements of deep and prolonged sedation. This can be achieved through the prevention and treatment of 5 specific symptoms: pain, agitation, delirium, immobility and sleep disruption. A multimodal approach, including non-pharmacological interventions and non-opioid analgesics, should be developed, and more attention be paid to the prevention of delirium and sleep disruption. These new guidelines need large dissemination worldwide, and probably adaptations to different cultures. In this way, the confusion (delirium) assessment method for the ICU and its training manual have recently been translated into French to allow implementation of this instrument and guidelines for delirium management in French speaking countries [20].

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Disclosure of interest

The authors declare that they have no competing interest.

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