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Perioperative Delirium: A Literature Review of Management in Intensive Care Unit

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A B S T R A C T

Perioperative delirium is a wide-ranging problem that directly affects primary clinical results. Delirium is an organ dysfunction in critically ill patients, independently associated with improved morbidity. This review aimed to explain perioperative delirium and its management in the intensive care unit. Most cases of delirium in the ICU remain undiagnosed. The delirium assessment is only for patients who respond to sound; therefore, it is necessary to use sedatives or disturbance of consciousness; the approved scale is the Richmond restless sedation scale (RASS) or the sedative restlessness scale (SAS). In a clinical setting, the diagnosis of postoperative delirium can be challenging. Delirium may manifest as agitation (hyperactivity) or withdrawal (hyperactivity), often alternating significantly. Formal neurocognitive assessments are very time-consuming and are usually only used by experts. The first-line treatment of postoperative delirium is evaluating and treating the underlying cause. In conclusion, delirium will increase the responsibility of many doctors with the ability to avoid precipitation factors. Efficient treatment, differences between engine subtypes, and the long-term results of delirium in ICU require additional investigation.

1. Introduction

Delirium was defined as acute brain dysfunction as the interruption of attention and consciousness that appears, fluctuates, and then changes in perception.[1] These disorders cannot be fully explained by established or developing neurocognitive disorders or impairments (although they may superimpose on primary cognitive diseases or brain damage), and there is evidence that the disorders are physical conditions, intoxicating substances, drug use, or multiple causes caused by direct physiological results.[2-4] The pathophysiology of delirium is multifactorial and evolving, and ongoing work explores the complex physiological interactions that lead to this condition. Many mechanisms of dysfunction have been proposed, including inflammation-mediated neuronal damage and changes in cerebral perfusion, endothelial dysfunction leading to increased blood-brain barrier permeability, decreased cholinergic activity, and changes in neurotransmitter stability and specific clinical pharmacological interventions.[5] This review aimed to explain perioperative delirium and its management in the intensive care unit.

Delirium risk factors

Risk factors for delirium consist of frailty factors (such as age and comorbidities) and hospital-related predisposing factors (such as acute illness and management-related). It increases the susceptibility to delirium with minimal predisposing factors and vice

versa. Risk factors for delirium, use of psychotropic drugs (especially benzodiazepines), drug-induced coma, sleep changes, metabolic disorders, and sepsis are potentially modifiable factors that clinicians should consider when developing prevention and prevention strategies treatment of delirium (Figure 1).[6,7]

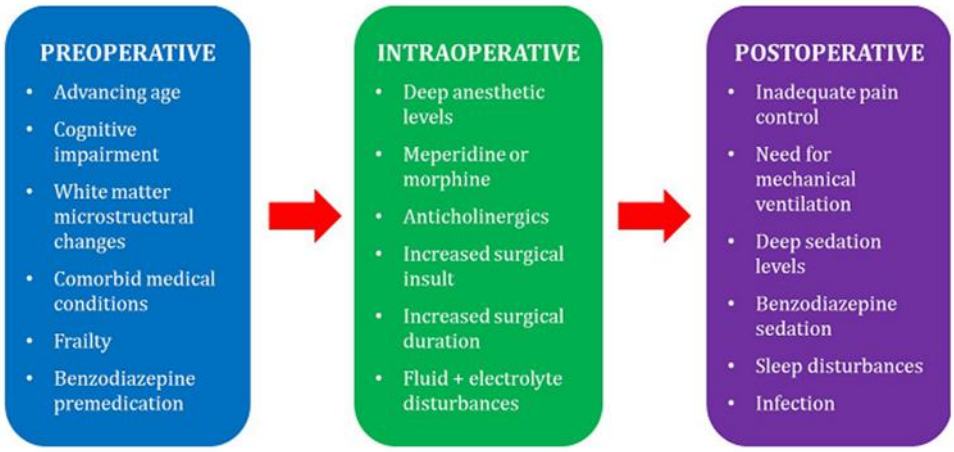

Figure 1. Multiple risk factors for delirium.

Assessment tools

Most cases of delirium in the ICU remain undiagnosed. The delirium assessment is only for patients who respond to sound; therefore, it is necessary to use sedatives or disturbance of consciousness; the approved scale is the Richmond restless sedation scale (RASS) or the sedative restlessness scale (SAS). The most widely used delirium monitoring scale recommended by CCM includes the Intensive Care Unit Confusion Assessment Method (CAM-ICU) and the Intensive Care Delirium Detection Checklist (ICDSC).[8-10]

Prevention and management of delirium

When delirium has cardiac, renal, and respiratory dysfunction markers, the lack of available biomarkers or radiological findings prevents the spread of delirium as significant organ dysfunction. However, given the related results, delirium cannot be ignored. The early implementation of comfort and analgesia using minimal sedation and humane care (eCASH) packages is a relatively new idea yet to be evaluated in clinical practice. Society for intensive care medicine (SCCM) guidelines recommend short-acting drugs (such as propofol and dexmedetomidine). Benzodiazepines and dexmedetomidine may be associated with improved delirium outcomes in mechanical ventilation patients. Early activity and physical rehabilitation can shorten the duration of mechanical ventilation, reduce the risk, and speed the determination of delirium.[9-11]

In addition, any patient with hypoactive delusions should be monitored for hallucinations or fearful delusions. Minimal data can help any effect of conventional antipsychotic treatment, such as haloperidol or atypical antipsychotics. Olanzapine, quetiapine, and ziprasidone prevent or treat delirium in critically ill adults. In non-intubated, mechanically ventilated patients, dexmedetomidine improved the resolution of hyperactive delirium.[12,13]

Management for established postoperative delirium

In a clinical setting, the diagnosis of postoperative delirium can be challenging. Delirium may manifest as agitation (hyperactivity) or withdrawal (hyperactivity), often alternating significantly. Formal neurocognitive assessments are very time-consuming and are usually only used by experts. The first-line treatment of postoperative delirium is evaluating and treating the underlying cause. Antipsychotics are currently used

as first-line treatments for restlessness. It can be speculated that treatment is now limited once there is an apparent delusion. Although antipsychotics are commonly used to control agitation symptoms, they do not change the course of delirium or its prognosis.[13,14]

Environment as a treatment tool

The tests on the stress of the ICU consistently show that continuous exposure to noise and constant noise is one of the most significant stress factors for ICU patients. It is assumed that environmental stress factors, such as multiple noise levels and inappropriate lighting conditions, may have difficulty in patients with delirium. An innovative approach to ecological degeneration can slightly reduce stress but improve recovery as a therapeutic intervention. These corrections help prevent photographic characteristics. The photos are a syndrome that covers the defects commonly observed in patients after treatment in ICU.[11]

Although delirium is more common in severely ill patients, after correction for common confounders (including the severity of illness), delirium is more associated with individual conditions. In the United States, delirium is associated with a 39% increase in ICU and a 31% increase in hospital costs. CAM-ICU was developed as a short, accurate, and reliable instrument for doctors and nurses to identify delirium in ICU patients.

2. Conclusion

Delirium will increase the responsibility of many doctors with the ability to avoid precipitation factors. Efficient treatment, differences between engine subtypes, and the long-term results of delirium in ICU require additional investigation.

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