

Post-operative Delirium in Geriatric Patients

M.A.Mansou, E.S.Abd el-azeem, M.H.Abd el- Fattah and A.A.Dawood

Anesthesiology and Intensive Care ,Dept., Faculty of Medicine, Benha Univ., Benha, Egypt

E-mail: aligamal75548@gmail.com

Abstract

The majority of surgical procedures performed every day in the globe need the use of general anaesthesia. Patients who need general anaesthesia tend to be elderly (often 65 and more). Delirium refers to a state of extreme and rapid mental disorientation. A abrupt shift in cognitive ability is what this term describes. Both agitation and sleepiness, or even a mix of the two, might result from this. Following anesthesia-related surgery, it is common for elderly people to have temporary cognitive impairment. Patients may be suffering from post-operative delirium if they have a severe decline in mental state, such as confusion, disorientation, chronic drowsiness, hallucinations, agitation, or violence.

Key words: Delirium, Geriatric Patient, Post-operative.

1. Introduction

A higher risk of morbidity and death is often related with postoperative delirium in patients 65 and older. Understanding who is at greatest risk for postoperative delirium and developing an effective strategy for early identification and treatment are essential for effective postoperative delirium care. [10].

Also, the elderly typically face the undetected complication of postoperative delirium (POD), a neuropsychiatric illness that occurs often in hospitalised surgical patients. cognitive decline, functional decline, high morbidity and mortality, prolonged hospitalisation, prolonged mechanical breathing, and intensive care unit (ICU) stays are all common outcomes. Depending on diagnostic criteria, the population under study, and the nature of the surgical procedure, the reported incidence of postoperative delirium for the elderly varies from 10% to 15%. [3].

Disorientation to time, place, and person, trouble naming objects, rambling speech, hallucinations, illusions, misinterpretations, and a general lack of focus are all symptoms of post-operative delirium in the elderly.[6].

In addition, the symptoms of delirium, which are a kind of acute postoperative psychosis, might change during the course of the disease. It's a complicated condition with a wide range of symptoms, some of which include mental dysfunction, disorientation, and acute brain syndrome. A strong index of suspicion on the part of doctors is necessary for the timely diagnosis of postoperative delirium. Because its symptoms consist of a sudden or relatively sudden decline in mental state, it can only be diagnosed by first establishing a patient's usual level of mental clarity. Delirium is diagnosed by combining the patient's history with their current state and the results of a physical exam, laboratory tests, and imaging studies. Eliminating the possibility of other neurocognitive diseases is necessary for a definitive diagnosis. [3].

As neuro-transmitters are generally important for regulating cognition, emotion, and behaviour, it is likely that an imbalance in their synthesis, release, and inactivation leads to delirium after surgery, but this is just a hypothesis. Norepinephrine, serotonin, glutamate,

dopamine, aminobutyric acid, melatonin levels, the cholinergic pathway, and oxidative stress hypotheses have all been implicated in the pathogenesis of delirium. These two regions probably operate together to induce delirium by fostering neurotransmitter dysregulation and network disconnectivity, which in turn leads to an imbalance in the activation or inhibition of neuronal networks (in specific cholinergic and GABAergic systems). According to the oxidative stress theory, delirium develops as a result of a cascade of events set in motion by localised ischemia brought on by inadequate blood flow to the brain. [1].

Delirium is a transient and variable disruption of attention, consciousness, and cognition. Postoperative delirium generally sets in about 24 hours and subsides 48 hours later. Types of delirium include those that are either too active or underactive, or a combination of the two. A worse outlook may be linked to the hypoactive subtype. . [4].

Further subgroups of postoperative delirium may be identified based on environmental factors. Further subtypes of postoperative delirium include those that manifest in the after anaesthesia care unit (PACU). Delirium in the intensive care unit (ICU) is characterised by its identification in the ICU, while there may be some overlap depending on when patients are brought to the ICU. There are specialised methods for handling the agitation that patients experience when they come out of anaesthesia. [6].

Reduced cognitive reserve due to advanced age (>65 years old), neuropsychiatric conditions like cognitive dysfunction, dementia, depression, use of psychotropic medications, history of postoperative delirium, history of stroke, poor physical status, functional disability, medical comorbidities, heart failure, diabetes mellitus, atrial fibrillation, anaemia, and reduced physical reserve due to atherothrombotic risk factors may all contribute to the occurrence of delirium. Several variables, including the amount of anaesthetic used, the length of surgery, its complexity, and the degree to which it is invasive, are linked to an increased likelihood of postoperative delirium. [9].

In addition, geriatric patients with low physiologic reserves are more likely to have surgical decompensation, which may have far-reaching effects

on not only the brain but also the patient's mental state and lead to the onset of delirium.

Admission to an intensive care unit, extended intubation, mechanical ventilation, inadequate pain treatment, altered sleep patterns, and other variables may all increase the risk of delirium in the postoperative period [8].

An anesthesiologist's quick assessment in the postanesthesia care unit (PACU) is required if delirium develops after surgery. It is important to have the patient's full medical history, including any drugs used before, during, and after surgery, as well as a review of the anaesthetic and surgical process. The next step is to conduct a thorough physical examination and any necessary laboratory work. In order to rule out potentially fatal issues including hypoxia, hypercarbia, and airway blockage, it is crucial to evaluate the patient's breathing and circulation. The Confusion Assessment Method (CAM) and the Delirium Symptom Interview are only two examples of the numerous instruments available for detecting, screening, and diagnosing delirium (DSI). Early diagnosis is greatly aided by routine screening of at-risk patients using an appropriate screening instrument, especially in the hypoactive type of delirium, which is notoriously difficult to identify. Patients with previous cognitive impairment, dementia, or mental problems may find it more difficult to get a definite delirium diagnosis [2].

The most effective methods for dealing with delirium are prevention, screening, and early treatment. Proactive geriatrics consultation, organised geriatrics consultations about supplementary oxygen, fluids, electrolytes, nutrition, pain management, early mobility, and physical rehabilitation are all examples of nonpharmacologic preventative measures. Several studies have shown that taking care of a patient's cognitive impairment, sleep deprivation, immobility, vision impairment, hearing impairment, and dehydration may help reduce the risk of delirium [5].

When the underlying causes of delirium, including pain or sleep deprivation, are attended to, the pharmacologic approaches may be very successful. Patients who are very agitated and pose a danger to themselves or others should continue to get antipsychotic treatment. Early results suggest that prophylactic ketamine or antipsychotic usage may be effective in preventing delirium [7].

The patient's health and medical expenses are impacted by the temporary mental impairment. It causes more people to become sick, means people don't get well as quickly, and means people have to spend more time in the hospital. Early identification and appropriate treatment are crucial due to the detrimental impact of postoperative delirium on health and health care expenditures. Anesthesiologists play a crucial role in the perioperative management of elderly patients undergoing surgery, so they need to be familiar with postoperative delirium and possess the knowledge and abilities necessary for the perioperative care of geriatric

patients, such as the ability to recognise high-risk patients, make a prompt diagnosis, and manage the case appropriately. For this reason, we set out to conduct a comprehensive review of the literature on postoperative delirium in the elderly, focusing on the role of anaesthesia in this condition [11].

Secondly, the importance of the research:

With an older population comes a rise in the prevalence of issues unique to the elderly during surgery. Delirium after surgery is a common problem in the elderly population. There is a wide variation in incidence from nine percent to eighty-seven percent based on factors such as patient demographic and operating stress. Postoperative delirium is linked with poor outcomes such as functional deterioration, prolonged hospitalisation, institutionalisation, more expenses, and higher death, making the detection and management of delirium crucial. This study aims to define postoperative delirium and explain how it is diagnosed and treated [12].

3. Purposes of the Research

The purpose of this research was to provide the health care professional caring for older adults in the perioperative setting with a set of evidence-based recommendation statements regarding the optimal techniques for preventing and treating postoperative delirium in geriatric patients undergoing anaesthetic and critical care procedures.

4. Conclusion

After a major operation, delirium is frequent in the elderly, although it is commonly misdiagnosed. It is easier for a doctor to diagnose delirium if they are familiar with its symptoms and the diagnostic criteria. With the use of delirium assessment instruments like the CAM-ICU, a quick and accurate diagnosis of delirium may be made.

Additionally, postoperative delirium is prevalent in elderly surgical patients and is often linked to increased morbidity and death. Knowing which patients are at the most risk for developing POD and taking a proactive approach to diagnosis and therapy is crucial for optimal management of POD.

Delirium should first be treated with environmental and supportive measures, which might be seen as prophylactic in patients with several risk factors. After then, pharmaceutical intervention is undertaken. Postoperative delirium is a prevalent problem in elderly postoperative patients, but may be mitigated with the right care.

In addition, antipsychotic medication, BIS-guided anaesthesia, and intravenous dexmedetomidine given before and during surgery have all been shown to be effective in lowering delirium rates. It is possible that the prevalence of delirium might be decreased even more if these treatments were added to the present multicomponent and multidisciplinary approaches.

More so, combining these strategies has the potential to avert further unfavourable postoperative

outcomes. Overcoming precipitating and predisposing risk factors should be utilised in tandem with any other effective intervention to maximise the intended effects. The pre-admission period is particularly crucial in preventing postoperative delirium in patients undergoing elective surgery. Therefore, it is important to investigate multimodal prehabilitation routes.

5. Summary

After surgery, the elderly often experience delirium. The risk of death, delay in functional recovery, and length of hospital stay are all raised. It seems that postoperative delirium in surgical patients is related to age, alcohol misuse, poor baseline cognition, severe metabolic imbalance, hypoxia, hypotension, and the kind of operation. Delirium is more likely to occur after anaesthesia, especially when combined with anticholinergic medications or benzodiazepines.

Additionally, delirium is a typical postoperative issue in the elderly, with many different causes. The acute neuropsychiatric condition has three distinct subgroups (hyperactive, hypoactive, and mixed) based on the severity of the affected individual's attention, awareness, and cognitive impairments. Over 40% of delirium episodes include the hypoactive type, which is predicted to be detected in just 50% of instances.

Furthermore, 17-61% of patients undergoing major surgery have delirium thereafter. There may be negative effects on cognition, length of stay (LOS), functional independence (FI), risk of dementia, caregiving load, medical expenses, and death. Thus, delirium is not only a major risk to the patient's health but also a significant financial strain on the healthcare system.

Multiple risk factors make adult people of Oder descent especially susceptible. Because of these predisposing characteristics and precipitating stimuli, patients are at increased risk for delirium. Prior research on delirium has identified a variety of risk factors, including advanced age, cognitive or functional impairment, several co-morbidities, a history of falls, and sensory deprivation. Multiple medications, poor nutrition, discomfort, urinary catheters, intensive care unit (ICU) admission, prolonged hospital stays, blood loss, preoperative anaemia, and certain types of surgery are all significant precipitating factors.

Treatment or intervention after the onset of delirium has little influence on the severity, duration, or recurrence of the condition. Primary preventive efforts are especially important since delirium may be avoided in 30–40% of cases. Risk factors may be reduced by measures including improved pain management, hearing or vision aids, improved sleeping conditions, physical activity instruction, and nutritional counselling. In an effort to modify the many components most likely to trigger a delirium, several preoperative, perioperative, and postoperative unimodal and multimodal, pharmacological and non pharmacological treatments have been attempted.

Lastly, a lack of knowledge surrounds the phenomenon of delirium after surgery in the elderly. Indeed, further research on the dangers and consequences of delirium in the elderly is required. Additionally, more study is required to determine the consequences of hypoxemia on brain function and the efficacy of oxygen treatment. Early surgery, thrombosis prophylaxis, oxygen therapy, prevention and treatment of perioperative decrease in blood pressure, and successful treatment of any postoperative complications are all part of the geriatric-anesthesiologic intervention programme that has shown some promise but for which more definitive studies are needed.

6. Recommendations

- Further studies are needed to determine the consequences and dangers of delirium for the elderly.
- More study is required to determine the impact of hypoxemia on brain function and the efficacy of oxygen treatment.
- Early surgery, thrombosis prophylaxis, oxygen therapy, prevention and treatment of perioperative decrease in blood pressure, and successful treatment of any postoperative complications are all part of the geriatric-anesthesiologic intervention programme that has shown some promise but for which more definitive studies are needed.

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