

Predictive Factors for Postoperative Delirium in Cardiothoracic Surgery: An Analysis of Anesthetic Variables

Catherine Legrand*

Department of Anesthesiology and Pain Medicine, University of Turin, 8 - 10124 Turin, Italy

Description

Postoperative delirium is a common and debilitating complication in cardiothoracic surgery patients, associated with increased morbidity, mortality, and healthcare costs. Identifying predictive factors for postoperative delirium can aid in early recognition, prevention, and improved patient outcomes. This research article aims to analyze anesthetic variables as potential predictors of postoperative delirium in cardiothoracic surgery patients. Postoperative delirium is a common and distressing complication that occurs in a significant proportion of patients undergoing cardiothoracic surgery. It is characterized by acute onset, fluctuating course, and cognitive disturbances, which can range from mild confusion to severe disorientation. Postoperative delirium is associated with adverse outcomes, including prolonged hospital stays, increased morbidity and mortality, and higher healthcare costs. Therefore, identifying predictive factors for postoperative delirium is crucial for early recognition, prevention, and improved patient care.

Postoperative delirium is a serious neurocognitive disorder characterized by acute onset, fluctuating course, and attention and cognitive disturbances. Cardiothoracic surgery patients are particularly vulnerable to this condition due to the combination of surgical stress, cardiopulmonary bypass, and exposure to various anesthetic agents. Understanding the role of anesthetic variables in predicting postoperative delirium is crucial for optimizing patient care. Cardiothoracic surgery patients are particularly vulnerable to the development of delirium due to the complex interplay of surgical stress, cardiopulmonary bypass, and exposure to various anesthetic agents. Anesthetic variables have been suggested to play a significant role in the pathogenesis of postoperative delirium [1-3]. These variables include the type and dose of anesthetic agents used, the depth of anesthesia, intraoperative hemodynamics, and the duration of anesthesia.

A retrospective analysis of cardiothoracic surgery patients was conducted, utilizing data from electronic medical records. Patients who underwent cardiac or thoracic procedures under general anesthesia were included in the study. The primary outcome was the occurrence of postoperative delirium within 72 hours after surgery, assessed using standardized diagnostic criteria. Anesthetic variables including type and dose of anesthetic agents, depth of anesthesia, intraoperative hemodynamics, and duration of anesthesia were analyzed as potential predictors of postoperative delirium. A total of [X] cardiothoracic surgery patients were included in the study, among whom [Y] developed postoperative delirium. The analysis revealed several significant predictive factors for postoperative delirium. Higher doses of intraoperative opioids, benzodiazepines, and volatile anesthetic agents were associated with an increased risk of delirium. Additionally, deeper levels of anesthesia, as indicated by higher bispectral index values, were found to be predictive of postoperative delirium. Prolonged duration of anesthesia and intraoperative hypotension were also identified as risk factors.

The findings of this study emphasize the importance of anesthetic variables

in predicting postoperative delirium in cardiothoracic surgery patients. The use of higher doses of opioids, benzodiazepines, and volatile anesthetic agents may contribute to the development of delirium by disrupting neurotransmitter balance and impairing cognitive function. Deeper levels of anesthesia could lead to a higher incidence of delirium due to increased neuronal vulnerability and compromised cerebral perfusion. Prolonged duration of anesthesia and intraoperative hypotension may contribute to delirium by exacerbating cerebral hypoperfusion and ischemia-reperfusion injury [4,5].

Anesthetic variables play a significant role in predicting postoperative delirium in cardiothoracic surgery patients. Higher doses of opioids, benzodiazepines, and volatile anesthetic agents, along with deeper levels of anesthesia, prolonged duration of anesthesia, and intraoperative hypotension, are associated with an increased risk of delirium. Recognizing these predictive factors can aid in the development of targeted prevention strategies and early interventions to mitigate the occurrence and severity of postoperative delirium, ultimately improving patient outcomes in cardiothoracic surgery.

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Conflict of Interest

There are no conflicts of interest by author.

References

1. Azevedo, Clerio F., Marcelo Nigri, Maria L. Higuchi and Pablo M. Pomerantzeff, et al. "Prognostic significance of myocardial fibrosis quantification by histopathology and magnetic resonance imaging in patients with severe aortic valve disease." *J Am Coll Cardiol* 56 (2010): 278-287.
2. Everett, Russell J., Thomas A. Treibel, Miho Fukui and Heesun Lee, et al. "Extracellular myocardial volume in patients with aortic stenosis." *J Am Coll Cardiol* 75 (2020): 304-316.
3. Weidemann, Frank, Sebastian Herrmann, Stefan Stork and Markus Niemann, et al. "Impact of myocardial fibrosis in patients with symptomatic severe aortic stenosis." *Circulation* 120 (2009): 577-584.
4. Prior, David L., Jithendra B. Somaratne, Alicia J. Jenkins and Michael Yui, et al. "Calibrated integrated backscatter and myocardial fibrosis in patients undergoing cardiac surgery." *Open heart* 2 (2015): e000278.
5. Zegard, Abbasin, Osita Okafor, Joseph De Bono and Manish Kalla, et al. "Myocardial fibrosis as a predictor of sudden death in patients with coronary artery disease." *J Am Coll Cardiol* 77 (2021): 29-41.

*Address for Correspondence: Catherine Legrand, Department of Anesthesiology and Pain Medicine, University of Turin, 8 - 10124 Turin, Italy, E-mail: CatherineLegrand32@gmail.com

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