
Any Rationale for Propofol Use in Cardiac Surgery?

To the Editor:

We read with interest the article by Krzych et al1 regarding propofol use in cardiac surgery. We agree with the authors that propofol is widely used in cardiac surgery worldwide for the induction and maintenance of general anesthesia and for sedation in intensive care units. We disagree that there is any evidence-based rationale to support its use in cardiac surgery when patients’ clinically relevant outcomes are considered.

A recent meta-analysis of 22 randomized controlled trials published in this journal2 suggested that patients receiving total intravenous anesthesia (propofol in 19 of 22 studies) have an increased mortality (14/872 [1.6%] vs 4/977 [0.4%], odds ratio = 0.31 [0.12-0.80], p = 0.02) and an increased incidence of myocardial infarction (45/874 [5.1%] vs 24/979 [2.4%], odds ratio = 0.51 [0.32-0.84], p = 0.008) when compared with patients receiving volatile agents.

Another article published in this journal3 included 34,310 coronary artery bypass graft interventions in 64 centers, and the risk-adjusted analysis showed that the use of volatile anesthetics was associated with a significantly lower rate of risk-adjusted 30-day mortality in centers using volatile agents when compared with centers using total intravenous anesthesia. Furthermore, a longer use of volatile anesthetics was associated with a significantly lower death rate (the longer the use of volatile agents, the lower the adjusted mortality in the hospital).

The beneficial effects of volatile agents in cardiac surgery are so important4 that the 2007 American College of Cardiology/American Heart Association guidelines for noncardiac surgery5 suggested that it can be beneficial to use volatile anesthetic agents even during noncardiac surgery for the maintenance of general anesthesia in hemodynamically stable patients at risk for myocardial ischemia (class IIa, level of evidence B) even if there is no evidence-based medicine to support this recommendation in the setting of noncardiac surgery.

Volatile agents are among the few drugs or techniques that could reduce myocardial infarction and death in the perioperative period,7 and their use should be expanded as much as possible at least in hemodynamically stable patients undergoing cardiac surgery. High-risk patients and hemodynamically unstable patients deserve further studies before an anesthetic regimen can be suggested to be superior in terms of clinically relevant outcomes.

Because propofol is a competitor of volatile agents (if you use propofol, you use less volatile agents during surgery and probably do not use volatile agents at all during cardiopulmonary bypass), its use should be discouraged in low-risk hemodynamically stable patients undergoing cardiac surgery.

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REFERENCES


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