



Perioperative neurocognitive disorders in cardiovascular surgery

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Abstract

Perioperative neurocognitive disorders, such as delirium and postoperative cognitive dysfunction (POCD), are related to increased long-term morbidity, mortality, and health care costs. POCD is a short-term decline in cognitive function, typically lasting for weeks or months after surgery. There is no consensus about factors related to the induction or prevention of POCD, as well as the appropriate assessment and rehabilitation of patients diagnosed with this condition. The higher risk occurs after cardiopulmonary bypass, although POCD can be observed in patients undergoing any surgery and any anesthesia technique. It is inferred that the use of certain anesthetics, as well as the duration and the depth of anesthesia can compromise some functions such as memory, executive function, and attention. Old age is the leading risk factor associated with POCD, although this adverse event can occur at any age. Additional factors determining poor postoperative outcomes can be low education level and preoperative quality of life (QoL); alcohol abuse; pre-existing cerebral, cardiac, and vascular dysfunctions; and multiple underlying medical conditions. Perioperative inflammation is also related to poor cognitive outcomes. Intraoperative hemodynamic stability is important to prevent delirium and postoperative cognitive dysfunction. However, they may occur following seemingly uneventful surgeries. Processed EEG can contribute to prevent intraoperative awareness, to optimize anesthetic dose, and to reduce delirium. Additional monitoring techniques can help the adequacy of cerebral oxygen balance, but their effects on the incidence of postoperative neurocognitive disorders are not entirely defined. It is recommended a cognitive assessment before surgery in all elderly patients or patients with risk factors for cognitive impairment, such as coronary disease, diabetes, frailty, lower educational levels, functional limitations, or candidates to major surgery. Considering the increase in life expectancy, the number of elderly patients undergoing cardiovascular surgeries, it is crucial to focus on the correct perioperative cognitive assessment.

Biography

Maria Carmona is an associated Professor of Anesthesiology at Faculdade de Medicina da Universidade de São Paulo, São Paulo, Brazil. She is the Director of Divisão de Anestesia in Instituto Central do Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo, São Paulo, Brazil. She is the Editor-in-chief of Brazilian Journal of Anesthesiology. Her research interests related to Anesthesia and Intensive Care for Cardiovascular Surgery and Postoperative Neurocognitive Disorders.



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