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Sevoflurane anesthesia: impact on postoperative cognitive dysfunction

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Abstract

Background: Sevoflurane is the inhalational anesthetic agent that is used widely in operating room. It is currently the most commonly used inhalation anesthetic in operating rooms. A series of studies on animal and human model detected the association of intraoperative use of sevoflurane and postoperative cognitive dysfunction (POCD) manifestation. On the other hand other studies demonstrate the same POCD associated with intravenous agents. Relevant multicentric trials got the reasons to suspect other key factors in developing postoperative cognitive dysfunction.
Conclusions: The intra-anesthetic use of sevoflurane has been associated for a long time with the higher incidence of POCD. The mechanism was not identified, and the theory of neuroinflammation remained the main key of pathophysiological reaction that leads to cognitive dysfunction. Recent multicentre trial gives reliable information that the use of intravenous anesthetic agents is associated with the same POCD. Neuroinflammation remains to be the mediator of cognitive disorders, and apparently IL-6 keeps a major role in them. Future studies are needed to be conducted to identify the role of anesthetic agents in determining the neuroinflammation.
Key words: sevoflurane, propofol, outcome, postoperative cognitive dysfunction.

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