Simple measures can reduce post-operative cognitive dysfunction in older patients

22 June 2016

Post-operative cognitive dysfunction (POCD), a condition mostly observed in older patients following surgery under general anesthesia, is characterized by impaired memory and concentration. The impairment may be temporary or permanent and incapacitating.

The problem has become more frequent as the population ages and also as a growing number of older adults undergo surgical procedures made possible by more advanced medical technology. Data from the scientific literature suggest a rise in mortality from POCD in the first year after surgery under general anesthesia.

The good news, according to a Brazilian study published by the journal *PLoS One*, is that two relatively simple measures can help to reduce the incidence of POCD: administering a small dose of the anti-inflammatory drug dexamethasone immediately before an operation and avoiding profound anesthesia during the operation.

The depth of anesthesia was monitored using bispectral index (BIS) technology, which processes electroencephalogram signals to measure drug-induced unconsciousness. The researchers classified a BIS of 35-45 as deep anesthesia and a BIS of 46-55 as superficial anesthesia.

In the fourth group (superficial anesthesia with dexamethasone), the incidence of POCD was 15.3% immediately after surgery, but after six months the pre-operative cognitive status was restored in all patients.

"The results reinforce recent evidence of the importance of avoiding deep anesthesia," Carmona said. "With regard to the use of dexamethasone, more research is needed to confirm our finding, preferably in multicenter trials, but there are strong indications that it can be beneficial in many cases."

The earliest trials with patients who developed POCD were performed after the 1950s. Before that, older patients were rarely subjected to major surgery, and significant research in this field has only been conducted for approximately 15-20 years.

"The causes of and risk factors for POCD are still being discussed," she said. "Little is said about
rehabilitation or ways of helping patients recover pre-opera
tive cognitive function."

One of the obstacles to reliable diagnosis and
rehabilitation is a lack of practical and secure
instruments for pre- and post-operative cognitive
assessment. "The tests available today are either
too time consuming or quick but unreliable,"
Carmona said. "This makes it hard to follow up on
patients."

**More information:** "Effects of Single Low Dose of
Dexamethasone before Noncardiac and
Nonneurologic Surgery and General Anesthesia on
Postoperative Cognitive Dysfunction—A Phase III
Double Blind, Randomized Clinical Trial", *PLoS

---

Provided by Fundação de Amparo à Pesquisa do
Estado de São Paulo


*This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.*