RO2: THE MONITOR OF MASS DEBATE

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Abstract:
Despite improvements in medical and technological procedures, morbidity affecting the central nervous system (CNS) perioperatively is still a challenge in cardiovascular surgery [1]. Complications involving the brain are of particular concern because of the devastating consequences and their impact on outcome.

Brain damage shows a wide spectrum of disorders after cardiac surgery. The extent of CNS involvement ranges from segmental deficit to more severe derangement. Stroke occurs in up to 6% of the cases, being the most evident clinical manifestation of brain injury. Neurocognitive dysfunction is the most frequent neurologic complication, occurring in up to 50–60% of patients, and is related to cognitive decline over time [2].

Cerebral NIRS is a noninvasive technique to monitor brain oxygenation by measuring regional cerebral venous oxygen saturation [3]. It is based on measuring intravascular oxyhemoglobin fraction in a small sample of cerebral cortex through the skull by means of nearinfrared light spectroscopy. Although measurement is performed on a small region of cranial microvasculature, the association between frontal-cortex oxygen desaturation and neurocognitive decline has been independently confirmed [4].

Neuromonitoring tools may guide both intervention and treatment, and are aimed at reducing brain damage during cardiovascular surgery, especially when combined in multimodality monitoring. Further prospective, double-blind, randomized outcome studies are needed to determine the optimal neurologic monitoring modality (or modalities) in specific surgical settings [5].

References:
3. Yao FS, Tseng CC, Ho CY, et al. Cerebral oxygen desaturation is associated with early
