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Perioperative steroids in cardiothoracic anesthesia and surgery

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The routine use of steroids in cardiothoracic anesthesia and surgery has contributed to an ongoing controversy. The debate of harm versus benefit continues, with evidence in the literature to support both sides. It is known that the use of cardiopulmonary bypass leads to an activation of the inflammatory response, which then leads to potential postoperative organ dysfunction. Steroids are thought to attenuate this inflammatory response by decreasing pro-inflammatory cytokines and increasing anti-inflammatory cytokines. Systematic reviews of steroid prophylaxis would suggest decreased morbidity after cardiac surgery, such as a lower incidence of postoperative atrial fibrillation, due to decreased inflammation. Similarly, a reduction in postoperative blood loss can be seen due to the relationship of coagulation and inflammation. However, despite a reduction in inflammatory mediators and a modest reduction in blood loss or ICU stay, stronger clinical outcomes such as mortality have not changed with the use of steroids. Also, concerns for impaired wound healing and postoperative hyperglycemia remain an issue. Two recent, large randomized trials have concluded no mortality benefit from prophylactic steroid use in cardiac surgery, with one trial even suggesting potential harm due to an increased risk of myocardial infarction. This data has provided argument against routine use of steroids in cardiac surgery. What remains to be determined is if steroids have a place in cardiac surgery in a select subgroup of patients, such as in circulatory arrest cases. Here, further research will be needed before a definitive answer can be reached on the steroid debate.

Biography

Prakash A Patel completed his MD at Jefferson Medical College, followed by residency and fellowship training in anesthesiology at the University of Pennsylvania. He is now an Assistant Professor in the Department of Anesthesiology and Critical Care for the Perelman School of Medicine at the University of Pennsylvania. Outside of the cardiac operating rooms, his research interests include blood conservation strategies and management of coagulopathy, including analysis of fibrinolysis after cardiac surgery. He is also actively involved with the Society of Cardiovascular Anesthesiologists and the Society for the Advancement of Blood Management.

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