Clonidine attenuated early proinflammatory response in T-cell subsets after cardiac surgery


T-cells play a central role in the immune response to injury. Cardiac surgery is associated with significant risk of systemic inflammatory response syndrome and subsequent unbalanced induction of proinflammatory cytokines. As clonidine has immunomodulating properties via reducing sympathetic activity, this study involved the analysis of T-cell function in the early postoperative period in patients undergoing coronary artery bypass graft surgery. Forty patients undergoing cardiac surgery were randomly allocated to one of the following groups: clonidine group (n = 20) [clonidine 1 microg kg(-1) h(-1)] and placebo group (n = 20). Study medication was started after induction of anesthesia and maintained until 6 h after surgery. Blood samples to determine Th1 and Th2 cells and cytotoxic lymphocytes (Tc1 and Tc2 cells) were drawn preoperatively, on admission to the intensive care unit, 6 and 12 h postoperatively as well as on the morning of days 1 and 2 after surgery. In the clonidine group significantly lower levels of Th1/Th2 ratios as well as Tc1/Tc2 ratios were found 6 h postoperatively compared to the placebo group (P < 0.05). Clonidine changed the ratio of T-lymphocyte subpopulations in peripheral blood in favor of a proinflammatory response, which might be favorable for maintaining immune balance after surgery

Anesth Analg 2006; 103(4):809