Effects of propofol and isoflurane on haemodynamics and the inflammatory response in cardiopulmonary bypass surgery


Abstract:

Cardiopulmonary bypass (CPB) causes reperfusion injury that when most severe is clinically manifested as a systemic inflammatory response syndrome. The anaesthetic propofol may have anti-inflammatory properties that may reduce such a response. We hypothesised differing effects of propofol and isoflurane on inflammatory markers in patients having CBP. Forty patients undergoing elective CPB were randomised to receive either propofol or isoflurane for maintenance of anaesthesia. CRP, IL-6, IL-8, HIF-1α (ELISA), CD11 and CD18 expression (flow cytometry), and haemoxgenase (HO-1) promoter polymorphisms (PCR/electrophoresis) were measured before anaesthetic induction, 4 hours post-CPB, and 24 hours later. There were no differences in the 4 hours changes in CRP, IL-6, IL-8 or CD18 between the two groups, but those in the propofol group had higher HIF-1α (P=0.016) and lower CD11 expression (P=0.026). After 24 hours, compared to the isoflurane group, the propofol group had significantly lower levels of CRP (P

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