

A Prospective Randomized Study to Evaluate changes in H-FABP as a novel marker of myocardial necrosis in patients undergoing Coronary Revascularization with and without cardiopulmonary bypass.

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Objectives

Myocardial damage in patients undergoing coronary artery bypass grafting (CABG) is an important cause of postoperative morbidity and mortality. A whole body response to cardiopulmonary bypass (CPB) can cause such damage. We examined this hypothesis using a novel marker termed heart type fatty acid binding protein (H-FABP) in patients undergoing CABG with and without CPB (OPCAB). H-FABP is a 15 KDa cytosolic protein that is abundant in the heart. It appears in the blood as early as 1.5 hours after infarction peaks around 6 hours and returns to baseline values in 24 hours.

Methods

Forty patients were randomized to either CABG with CPB (ONCAB) (n=20) or OPCAB (n=20). Blood samples were collected from the radial artery into ethylenediaminetetraacetic acid (EDTA)-containing glass tubes shortly after anaesthetic induction, at the end of operation and 4,8,12 hours postoperatively. The samples were immediately centrifuged in a refrigerated centrifuge to separate the plasma, which was subsequently frozen and stored at -70°C until assayed.

Results

There was a statistically significant increase in H-FABP immediately post operatively in the CPB group post operatively ($p<0.001$), 4 hours ($p<0.0266$), 12 hours ($p<0.0319$).

Conclusion

Patients undergoing CABG with CPB suffered greater myocardial damage as detected by changes in H-FABP. Further randomised studies are required to validate the role of H-FABP in this patient group.