

A Prospective Randomized Study to Evaluate Changes in I-FABP as a novel marker of Intestinal necrosis in patients at High-Risk of Renal Injury undergoing Coronary Revascularization with and without cardiopulmonary bypass.

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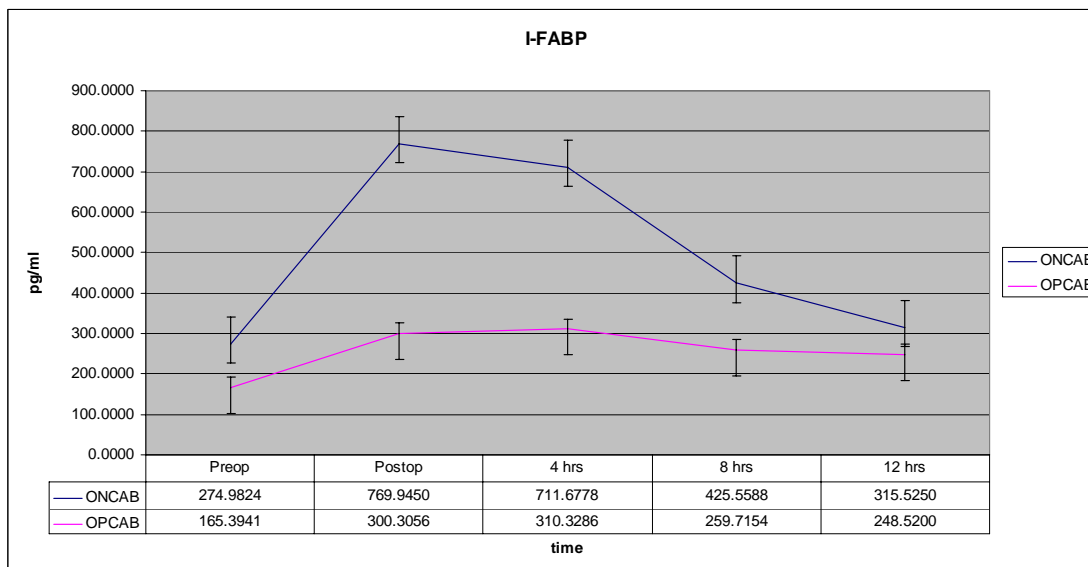
Objectives.

Many studies have suggested that the gut is the motor of the inflammatory cascade associated with cardiopulmonary bypass (CPB). CPB induced vasoconstriction causes a drop in splanchnic blood flow during the operative and postoperative period leading to intestinal injury and thus facilitating bacterial permeation. We examined this hypothesis using a novel marker termed Intestinal - type fatty acid binding protein (I-FABP) in patients undergoing CABG with and without CPB (OPCAB). When intestinal ischemia is limited to a period less than 2 hours only the villi are affected and there is rapid recovery of function. I-FABP is mainly expressed in the villi making it an excellent marker of intestinal ischemia

Methods

Forty patients were randomized to either CPB (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 significant increase in I-FABP levels immediately postoperatively ($p=0.0021$) and at 4 hours ($p=0.0089$). There after no statistical differences were noted between the two groups up to 12 hours postoperatively.

Conclusion

To our knowledge this is the first study to document changes in I-FABP in this patient group. It adds further weight to the theory that CPB induced changes in the splanchnic circulation causes occult damage of the intestinal villi and is responsible for initiation of the systemic inflammatory response.