

SCA 33

DELTA C-REACTIVE PROTEIN LEVELS CORRELATE WITH ORGAN DYSFUNCTION AND LENGTH OF STAY IN HIGH-RISK PATIENTS UNDERGOING CARDIAC SURGERY

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Introduction: Elevated preoperative levels of c-reactive protein (CRP) have been associated with postoperative complications in cardiac surgical patients.¹ Postoperative increases in CRP occurs in almost all cardiac surgical patients. An association between the postoperative CRP value and complications has not been established.² We postulated that the degree of perioperative inflammation as measured by the change in CRP (postoperative (24 hours) CRP – preoperative CRP) would predict an abnormal postoperative course following cardiac surgery.

Methods: 30 gery were enrolled in this pilot study. Patients were included if they were 70 years or older or met one the following inclusion criteria; 1) recent (<14 days) MI 2) preoperative serum Cr > 1.3 mg/dL 3) previous cardiac surgery or 4) previous neurological event. Serum CRP was measured prior to anesthetic induction (T0), on arrival to the ICU (T1) and on the first postoperative day (T3). Patients' clinical course was followed through discharge from hospital and several clinical parameters were prospectively collected including time to extubation, cardiac troponin > 36 mcg/L values (a measure of myocardial injury following cardiac surgery)³ and ICU and hospital length of stay.

Results: The change in CRP (deltaCRP) was significantly correlated to mechanical ventilation requirements of > 24 hours (O.R. 1.02, C.I. 1.00-1.03, p=0.02), ICU length of stay (r=0.49, p=0.006) and hospital length of stay (r=0.47, p=0.009). Furthermore patients with perioperative myocardial ischemia (cTnI > 36 mcg/dL) were also more likely to have elevated delta CRP values (O.R. 1.04, C.I. 1.00-1.07, p=0.01). Figures 1 and 2 also show these data by quartiles of delta CRP.

Conclusion: In patients undergoing surgery, high delta CRP values are associated with adverse outcome as measured by LOS and mechanical ventilation. Furthermore, high delta CRP values are associated with more myocardial injury as reflected by more patients having higher troponin levels in the higher quartiles of delta CRP values (figure 1).

1. Boeken et al. Eur J Cardiothorac Surg 1998; 13: 541-5
2. Aouifi et al. Br J Anaesth 1999; 83: 602-7
3. Benoit et al. Crit Care Med 2001; 29: 1880-6

Figure 1-Myocardial Injury

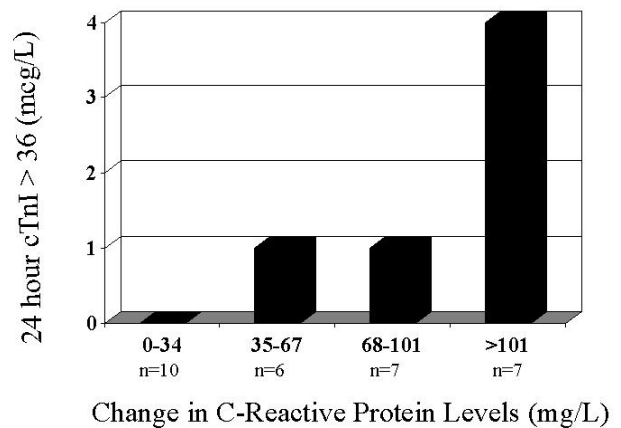


Figure 2 - Length of Stay

