Apolipoprotein E genotype, TNF-\(\beta\) 308G/A and risk for cardiac surgery associated-acute kidney injury in Caucasians.

Abstract:
Acute kidney injury following cardiac surgery depicts a severe clinical problem that is strongly associated with adverse short- and long-term outcome. We analyzed two common genetic polymorphisms that have previously been linked to renal failure and inflammation, and have been supposed to be associated with cardiac surgery associated-acute kidney injury (CSA-AKI). A total of 1415 consecutive patients who underwent elective cardiac surgery with CPB at our institution were prospectively enrolled. Patients were genotyped for Apolipoprotein E (ApoE E2,E3,E4) (rs429358 and rs7412) and TNF-\(\beta\)-308 G> A (rs1800629). Demographic characteristics and procedural data revealed no significant differences between genotypes. No association between ApoE (E2,E3,E4) and TNF-\(\beta\)-308 G> A genotypes and the RIFLE criteria could be detected. Several multiple linear regression analyses for postoperative creatinine increase revealed highly significant associations for aortic cross clamp time \(p\) A genotypes or baseline creatinine. When the sample size is 1415, the multiple linear regression test of \(R^2 = 0\) for seven covariates assuming normal distribution will have at least 99% power with significance level 0.05 to detect an \(R^2\) of 0.108 or 0.107 as observed in the data. ApoE
(E2,E3,E4) polymorphism and the TNF-?-308 G> A polymorphism are not associated with renal injury after CPB.