Reduced aspirin responsiveness as assessed by impedance aggregometry is not associated with adverse outcome after cardiac surgery in a small low-risk cohort

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Reduced aspirin responsiveness (i.e. persistent high platelet reactivity in platelet function testing) might be associated with increased risk of myocardial ischemia and cardiac mortality in patients with coronary disease. However, the impact in patients undergoing coronary artery bypass grafting (CABG) is unclear. The aim of this prospective cohort study was to evaluate the predictive value of reduced aspirin responsiveness on cardiac and thromboembolic events in patients undergoing elective isolated CABG surgery with aspirin intake until at least two days before surgery. We included 304 patients in this prospective single-center cohort study. Impedance platelet aggregometry (Multiplate®) was performed directly before and on the first day after surgery. Reduced aspirin responsiveness was defined as area under the curve in ASPItest (AUCASPI) ≥300 U. The primary outcome was a composite of all-cause mortality and/or major adverse cardiac or thromboembolic events within 1 year. Reduced aspirin responsiveness was found in 13 and 24% of patients pre and postoperatively, respectively. There was no difference in the outcomes between patients with normal and reduced aspirin responsiveness in the preoperative measurement (log-rank test, p = 0.540). Multivariate analysis including logistic EuroSCORE I and postoperative troponin T levels did not show any association of reduced aspirin responsiveness with adverse outcome (hazard ratio, 0.576; 95% CI 0.128-2.585; p = 0.471). Similarly, postoperative reduced aspirin responsiveness was not associated with adverse events. To conclude, reduced aspirin responsiveness as evaluated by Multiplate® platelet function analyzer was not associated with increased incidence of major adverse cardiac and thromboembolic events and mortality after CABG surgery.