Dokumenttyp: journal article

Autor(en) des Beitrags: Cammerer, U; Dietrich, W; Rampf, T; Braun, SL; Richter, JA

Titel des Beitrags: The predictive value of modified computerized thromboelastography and platelet function analysis for postoperative blood loss in routine cardiac surgery.

Abstract: Hemorrhage after cardiopulmonary bypass (CPB) remains a clinical problem. Point-of-care tests to identify hemostatic disturbances at the bedside are desirable. In the present study, we evaluated the predictive value of two point-of-care tests on postoperative bleeding after routine cardiac surgery. Prospectively, 255 consecutive patients were studied to compare the ability of modified thromboelastography (ROTEG) as well as a platelet function analyzer (PFA-100) to predict postoperative blood loss. Measurements were performed at three time points: preoperatively, during CPB, and after protamine administration with three modified thromboelastography and PFA tests. The best predictors of increased bleeding tendency were the tests performed after CPB. The angle alpha is the best predictor (area under the receiver operating characteristic curve 0.69) and, in combination with the adenosine diphosphate-PFA test, the predictive accuracy is enhanced (area under the receiver operating characteristic curve 0.73). The negative predictive value for the angle alpha is 82%, although the positive predictive value is small (41%). Thromboelastography is a better predictor than PFA. In routine cardiac surgery, impaired hemostasis as identified by point-of-care tests does not inevitably lead to hemorrhage postoperatively. However, patients with normal test results are unlikely to
bleed for hemostatic reasons. Bleeding in these patients is probably caused surgically. The high negative predictive value supports early identification and targeted treatment of surgical bleeding by distinguishing it from a significant coagulopathy. IMPLICATIONS: Thrombelastography and platelet function analysis in routine cardiac surgery demonstrate high negative predictive values for postoperative bleeding, which supports early identification and targeted treatment of surgical bleeding by distinguishing it from a significant coagulopathy. The positive predictive values are small. The best predictors are thrombelastography values obtained after cardiopulmonary bypass.