

Preoperative PFA 100 to predict risk of Postoperative Bleeding in Patients Treated with Platelet Inhibitors and Underwent CABG.

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Objectives

The use of platelet inhibitors (PI), in particular GPIIa/IIIb receptors antagonists, increases the effectiveness of percutaneous transluminal coronary procedures (angioplasty, stenting, etc.) and it reduces dramatically emergent CABG in number. Unfortunately, when these procedures are not efficient to avoid CABG, the use of PI becomes a relevant risk of postoperative bleeding. However, the literature shows that not all Patients (Pts) treated with PI have a significantly increase of postoperative blood loss. Hence, methods to assess the real risk of bleeding in this group of Pts are mandatory. PFA 100 is a test for evaluating the platelet function. Aim of this study is the assessment of the real predictive value of PFA 100 for postoperative blood loss in patients who were treated with PI and who underwent CABG.

Methods

We enrolled from January 2002 to September 2005, 142 consecutive Pts who underwent emergent or urgent CABG by mean moderate hypothermic CPB without operative and postoperative complications. All Pts were preoperatively treated with PI (Abciximab or Tirofiban or Clopidogrel), aspirin (or ticlopidine in allergic Pts) and heparine (or LMWH). Pts were divided in two different groups of risk for bleeding: 1) high-risk: group A (GA) with preoperative PFAe ≥ 250 (65 Pts) 2) low-risk: group B (GB) with preoperative PFAe < 250 (77 Pts). Pre-operative PFAe and postoperative blood loss within 6, 12 and 24 hours (h) were recorded and compared.

Results

The blood loss within 6h was $598,7 \pm 258,7$ ml in GA and $393 \pm 257,9$ ml in GB ($p=0.02$). No other significant differences were observed for blood loss within 12 and/or 24h. The postoperative haematic concentration of haemoglobine was significantly higher in GB than GA ($9,98$ vs $8,74$; $p=0,016$). Similarly, the postoperative haematocrit was significantly higher in GB than in GA ($29,85$ vs $25,94$; $p=0.0069$). According with this trend the postoperative administration of platelets was lower in GB than in GA (Units of platelets: $0,028$ vs $0,75$; $p=0,036$).

The analysis of the efficiency of the test shows: sensitivity= 0.59, specificity= 0.86, positive predictive value= 0.67, test effectiveness= 0.77 and bias=0.87.

Conclusions

PFAe seems useful to assess the real risk of bleeding for platelet dysfunction in Pts preoperatively treated with PI and scheduled for CABG.