

## Influence of Aspirin Therapy to Postoperative Bleeding Depending on Fibrinogen Plasma Levels after On-pump Cardiac Surgery

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**Introduction.** Aspirin is an antiaggregant which inhibits permanently platelet aggregation by blocking synthesis of thromboxane A<sub>2</sub>. Perioperative evaluation of the influence of aspirin continuation or cessation on bleeding still has disclosed controversial results. The speculation whether higher fibrinogen plasma levels may improve aggregation process, consequently, decrease the amount of blood loss in patients on an aspirin regimen is present.

**Aim.** The goal of the study is to determine the influence of fibrinogen plasma level to postoperative bleeding in patients on an aspirin therapy after on-pump cardiac surgery.

**Material and Methods.** In the prospective study, 56 patients undergoing on-pump cardiac surgery, with EuroSCORE II < 10% were included. The patients were stratified according to whether they received 100 mg aspirin before surgery (aspirin group, n = 21) or they were not taking aspirin at least five days prior to it (non-aspirin group, n = 35). Fibrinogen plasma level was detected using method of Clauss preoperatively and immediately after surgery. Blood loss in ml was measured from chest tube drainage (CTD) system 12 and 24 hours (h) postoperatively. Comparative analysis was performed between aspirin and non-aspirin groups, regarding fibrinogen level in association with postoperative bleeding.

**Results.** Greater bleeding tendency was observed in aspirin group  $518 \pm 294$  ml/24 h compared to non-aspirin group  $432 \pm 244$  ml/24 h. Fibrinogen plasma level on baseline was consistent in both groups  $3.3 \pm 0.6$  g/L in aspirin and  $3.3 \pm 0.7$  g/L in non-aspirin group. After CPB cryoprecipitate (CRIO) received 11 (31%) in non-aspirin and 11 (52%) in aspirin group; the latter receiving CRIO demonstrated statistically lower bleeding volume after surgery  $246 \pm 99$  vs.  $457 \pm 266$  ml/12 h;  $p = 0.02$ . Only in aspirin group, postoperative fibrinogen showed significant negative correlation with 24 h blood loss ( $r = -0.5$ ;  $p = 0.02$ ). Moreover, greater blood loss was noticed in aspirin group for those who had fibrinogen level  $\leq 3$  g/L after surgery,  $510 \pm 288$  vs.  $265 \pm 119$ ;  $p = 0.002$ , respectively.

**Conclusions.** Patients on aspirin regimen could benefit from higher fibrinogen plasma levels, especially, undergoing on-pump cardiac surgery, where fibrinogen plays a pivotal role.