

SCA 83

DOES TRANEXAMIC ACID REDUCE BLEEDING AFTER OFF-PUMP CORONARY ARTERY BYPASS GRAFTING?

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Background: We assessed the hemostatic effects of tranexamic acid to decrease transfusion requirements and bleeding in patients undergoing coronary surgery without cardiopulmonary bypass (beating heart surgery).

Methods: 66 patients were enrolled to elective off-pump CABG in a double-blind, prospectively randomized study. Of these, 33 patients received tranexamic acid (15mg/kg before the injection of heparin and 15mg/kg after protamin injection), and 33 Patients received saline. Preoperative hematological variables, postoperative bleeding and allogeneic transfusions were considered. Major postoperative thrombotic events, such as a myocardial infarction, stroke

and pulmonary embolism were recorded. D-dimer and fibrinogen plasma levels were also evaluated to monitor the activation of fibrinolysis.

Results: Postoperative bleeding was significantly lower in the tranexamic acid group compared with the control group (90±25 vs. 150±30 mL at 4 hours, p<0.01; 320±38 vs. 480±75 mL at 12 hours, p<0.05). The percentage of patients not receiving any allogeneic blood products during or after operation in tranexamic acid and control groups were 27% and 39%. The tranexamic acid group had significantly lower need for allogeneic blood products (0.46 units/patients vs. 0.94 units/patients, p < 0.001), and lower postoperative D-dimer plasma levels. No postoperative thrombotic complications were observed in either group.

Conclusion: Tranexamic acid effectively reduces postoperative blood loss and the need for allogeneic blood products after off-pump CABG. Defective hemostasis is even seen in the absence of cardiopulmonary bypass, and use of antifibrinolytic agents decreases post-bypass bleeding in off-pump CABG.