

Use of tranexamic acid to reduce blood losses in open abdominal aortic aneurysm repair: a randomized trial.

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Introduction. Open repair of abdominal aortic aneurysm (AAA) is a common procedure representing the gold standard in patients with long life expectancy. Bleeding and transfusions in this setting play a major role over morbidity and mortality. Bleeding is multifactorial, and the activation of fibrinolysis may be an important factor contributing to the issue. Tranexamic acid is safe and effective in multiple settings. The aim of the study was to determine if tranexamic acid administration decreases perioperative bleeding in patients undergoing open AAA repair

Methods. We performed a single center, double blinded, parallel-group, randomized controlled trial, including patients older than 50 years undergoing open AAA surgical repair between 2015 and 2017. Patients were randomized to receive either tranexamic acid (a loading dose of 500 mg 20 minutes before surgery and a continuous infusion 250 mg/h from surgical incision until skin closure) or placebo. Primary outcome was intraoperative blood loss. Secondary outcomes included the number of patients receiving packed red blood cells, postoperative blood losses and mortality 28 days after surgery.

Results. 100 patients were randomized. Intraoperative blood loss didn't significantly differ between the two groups (400 [300-1050] ml in the tranexamic acid group vs 500 [360-1000] ml with placebo, $p=0.44$). In the postoperative period, patients in the tranexamic acid group experienced lower blood losses both at 4 hours (70 ± 45 ml vs 105 ± 60 ml, $p<0.001$) and 24 hours (215 ± 140 ml vs 300 ± 135 ml, $p=0.003$). A trend towards reduction in transfusion was seen in the tranexamic acid group (7/50 (14%) vs 12/50 (24%), $p=0.20$). No death at 28-days was recorded.

Conclusions. Tranexamic acid significantly reduced postoperative blood losses after open AAA repair. Tranexamic acid could represent a cost-effective blood sparing strategy and the acid use in open AAA, and its promising results call for larger studies investigating its role on harder clinical outcomes.