

 SURGERY

# Use of tranexamic acid in coronary surgery

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Tranexamic acid is an antifibrinolytic agent used in patients undergoing coronary surgery to reduce the risk of excessive bleeding and the need for blood transfusions. In the ATACAS trial published in *NEJM*, tranexamic acid was associated with a reduced risk of bleeding, without an increased risk of thrombotic complications or death, but was also associated with a higher risk of perioperative seizures compared with placebo.

In the two-by-two factorial trial, 4,631 patients who underwent coronary artery surgery were randomly assigned to receive aspirin or placebo and tranexamic acid or placebo. The data for tranexamic acid have now been reported.

The primary outcome of death and thrombotic complications within 30 days of surgery occurred in 16.7% of the tranexamic acid group and 18.1% of the placebo group (relative risk [RR] 0.92, 95% CI 0.81–1.05,  $P=0.22$ ). Use of tranexamic acid was associated with a substantial 46% reduction in

the need for blood transfusion compared with placebo (4,331 units of blood products versus 7,994 units;  $P<0.001$ ). The rate of major haemorrhage or cardiac tamponade leading to reoperation was also reduced with tranexamic acid (1.4% versus 2.8%; RR 0.49, 95% CI 0.32–0.75,  $P=0.001$ ).

Of note, 0.7% of the patients who received tranexamic acid had a seizure, compared with 0.1% of patients in the placebo group (RR 7.62, 95% CI 1.77–68.71,  $P=0.002$ ). In a *post-hoc* analysis, patients who had one or more postoperative seizures were at increased risk of stroke (RR 21.88) and death (RR 9.52) up to 30 days after surgery. “The relationship of postoperative seizures with stroke and death observed in this trial,” comment the investigators, “suggests a possible underlying thrombotic cause of the seizures.”

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**ORIGINAL ARTICLE** Myles, P.S. et al. Tranexamic acid in patients undergoing coronary-artery surgery. *N. Engl. J. Med.* <http://dx.doi.org/10.1056/NEJMoa1606424> (2016)