FIVE THINGS TO KNOW ABOUT ...

Tranexamic acid for trauma-related hemorrhage

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1

Many patients die from bleeding related to trauma

Uncontrolled hemorrhage causes 30%–45% of all trauma-related deaths. The Clinical Randomisation of an Antifibrinolytic in Significant Haemorrhage (CRASH-2) trial, an international, multicentre randomized controlled trial of tranexamic acid in trauma-related hemorrhage, randomized trauma patients with suspected substantial bleeding (heart rate > 110 beats/min, systolic blood pressure < 90 mm Hg or both) and those who were considered by their physician to be at substantial risk of bleeding,[1] to either tranexamic acid or placebo.

3

Tranexamic acid prevents clot breakdown

Tranexamic acid is an antifibrinolytic agent that binds and inhibits plasmin to stop fibrin breakdown. If hemorrhage is suspected, the recommended dosage is 1 g intravenously over 10 minutes, followed by 1 g over eight hours.[1] Tranexamic acid is inexpensive: it costs about Can$12 for 2 g of treatment, with a cost per life saved of about $790.

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2

There is good evidence that tranexamic acid saves lives

Results from CRASH-2 showed that trauma patients given tranexamic acid had an improved overall in-hospital mortality at four weeks compared with controls (relative risk 0.91, 95% confidence interval 0.85–0.97, number needed to treat = 67).[1] Subgroup analysis suggested that the reduction in mortality was greatest when the agent was given within three hours after injury. Tranexamic acid also appears to confer the greatest benefit to patients with severe injuries and those who receive massive transfusions.[1–4]

4

Canadian trauma centres are using tranexamic acid

In Canada, the use of tranexamic acid is standard care in many trauma centres. A currently approved protocol for its use in a Canadian trauma centre is provided in Appendix 1 (www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.131741/-/DC1). Evidence supporting the use of tranexamic acid in children is lacking, and its use is currently not indicated for isolated head injuries.

5

The potential harms of tranexamic acid in trauma-related hemorrhage appear to be minimal

Despite the theoretical increased risk of coagulation associated with tranexamic acid treatment (e.g., pulmonary embolism, stroke, myocardial infarction), CRASH-2 showed no increased risk of adverse events.[1] The risk for patients taking anticoagulants is unclear. Intraoperative use of tranexamic acid at high doses (> 100 mg/kg) may increase the risk of seizures.[5]

References

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Resources for clinicians

Prognosic models are available at the CRASH-2 website

- http://crash2.lshtm.ac.uk