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A systematic review and meta-analysis assessing the use of tranexamic acid (TXA) in acute gastrointestinal bleeding

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Background: Acute gastrointestinal bleeding results in significant morbidity, cost and mortality. Tranexamic acid (TXA), an antifibrinolytic drug, has been proposed to reduce mortality, however many studies report conflicting results. The aim of this review was to perform a systematic review and meta-analysis of randomized clinical trials (RCTs) to evaluate the efficacy and safety of TXA for acute gastrointestinal bleeding.

Methods: A systematic review and meta-analysis was performed as per PRISMA guidelines. PubMed, EMBASE, Cochrane and Scopus databases were searched for relevant randomised control trials. Dichotomous variables were pooled as risk ratios (RRs) and associated 95% confidence intervals (CIs) using the MH method and with random effects modelling.

Results: A total of 14 RCTs were selected with 14,338 patients and a mean age of 58.4 years. 34.9% (n=5,008) were female and 65.1% (n=9,330) were male. There was no statistically significant difference in mortality, the primary outcome, between TXA and placebo [RR 0.86, 95% CI: (0.74 to 1.00), P=0.05]. Secondary outcomes including rebleeding [RR 0.85, 95% CI: (0.71, 1.03)]; need for surgical intervention [RR 0.75, 95% CI: (0.53, 1.07)]; endoscopic intervention [RR 0.92, 95% CI: (0.70, 1.22)]; transfusion requirement [RR 1.01, 95% CI: (0.94, 10.7)] and length of stay [RR 0.03, 95% CI: (-0.03, 0.08)]. Similarly, there was no significant difference between TXA and placebo. There was also no significant increased risk of venous thromboembolism

(VTE) with TXA [RR 1.29, 95% CI: (0.53, 3.16)]. One trial (n=12,009) reported an increased risk of seizure in the TXA group [RR 1.73, 95% CI: (1.03–2.93)].

Conclusions: TXA does not reduce mortality in patients with acute gastrointestinal bleeding. TXA does not improve other outcomes, such as rebleeding risk, and may confer an increased risk of seizures. TXA should not be routinely prescribed for patients in the setting of acute gastrointestinal bleeding.

Keywords: Tranexamic acid (TXA); upper gastrointestinal haemorrhage; lower gastrointestinal haemorrhage; gastrointestinal bleeding

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Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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