The Role of Tranexamic Acid Use in Reducing Mortality in Acute Upper GI Bleeding: A Systemic Review and Meta-analysis

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Introduction: Tranexamic acid (TXA) prevents fibrinolysis and is utilized in surgical setting to prevent trauma bleeding. The use of TXA in acute UGIB has been evaluated in numerous studies but without conclusive evidence on its mortality benefits.

Methods: We performed a comprehensive search of the databases: PubMed/MEDLINE, Embase, and the Cochrane Central Register of Controlled Trials from inception through May 15th, 2022. We considered only randomized controlled trials. The primary outcome was the all-cause of mortality rate. The secondary outcomes were the refractory bleeding and the need of endoscopic intervention. The random-effects model was used to calculate the risk ratios (RR) and 95% confidence intervals (CI). A p value <0.05 was considered statistically significant.

Results: Twelve randomized controlled trials involving 14,100 patients were included in the meta-analysis. The mortality rate which was significantly lower in patients who received TXA (4.6% vs 5.3%, RR 0.73, 95% CI 0.58-0.93, p=0.01, I2 = 17%) (Figure 1a). The rate of refractory bleeding was also lower in the same group (10.6% vs 21.1%, RR 0.57, 95% CI 0.37-0.87, p =0.009, I2 = 43%) (Figure 1b). There was no statistical difference in the rate of requiring endoscopic intervention (40.3% vs 42.5%, RR 0.95, 95% CI 0.75-1.20, p =0.67, I2 =23%) (Figure 1c).

Discussion: Our meta-analysis demonstrated that the all-cause mortality rate was significantly lower in the patients with acute UGIB who received TXA. Moreover, the rate of refractory UGIB was lower in patients who were given TXA. TXA maybe utilized clinically in patients presenting with UGIB.

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