The Use of Tranexamic Acid in Hip Fracture Surgery

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Purpose: Our objective was to analyze the effect of IV tranexamic acid (TXA) on blood transfusion requirements in adult patients undergoing hip fracture surgery. A secondary aim was to evaluate the safety by assessing thromboembolic events.

Methods: Studies eligible for inclusion were randomized controlled trials that analyzed the use of IV TXA on blood transfusion requirement in hip fracture surgery. Titles and abstracts were screened and assessed for eligibility by 2 independent reviewers. Quality and risk of bias was assessed using the Grading of Recommendations Assessment, Development and Evaluation approach and the Cochrane risk-of- bias tool (RoB2). Meta-analysis with random and fixed effect models was performed. Risk ratio (RR) was calculated for dichotomous outcomes and estimated with a 95% confidence interval (CI). For continuous data, the risk difference (RD) was estimated with a 95% CI.

Results: A total of 13 trials involving 1194 patients were included. Pooled results showed that patients in the TXA group had significantly lower transfusion requirements (RR 0.50, 95% CI 0.30–0.84, P = 0.009). Similar findings were observed in the subcohort of patients with transfusion threshold of hemoglovin (Hb) <8 g/dL, (RR 0.42, 95% CI 0.31–0.56, P<0.0001). This risk reduction was not observed in the subcohort of patients with transfusion threshold of Hb 8.1–10 g/dL who received TXA (RR 0.77, 95% CI 0.51–1.18, P = 0.23) and no statistically significant differences were found for total thromboembolic events (RR 0.01, 95% CI –0.02 to 0.04, P = 0.47).

Conclusion: This meta-analysis demonstrated that IV TXA reduced blood transfusion rates and did not increase the risk of thromboembolic events.

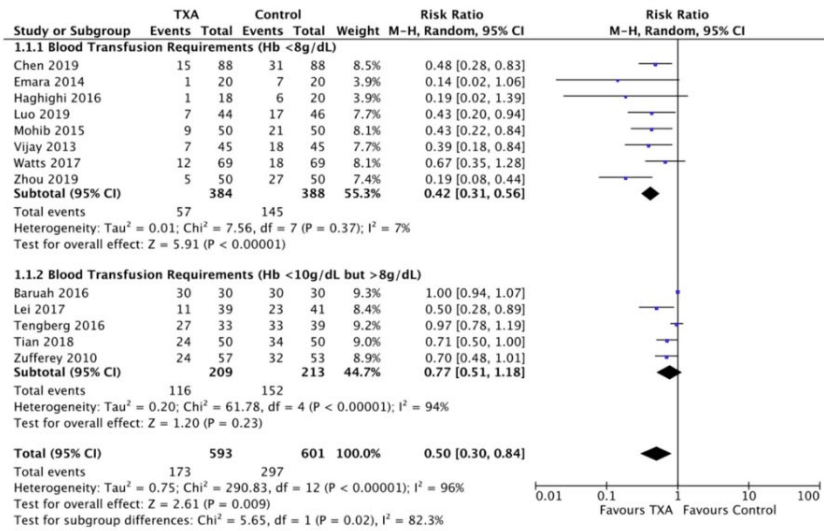

FIGURE 2. Forest plot showing subgroup analysis for blood transfusion requirement.

The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or medical device they wish to use in clinical practice.