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Safety and Efficiency of Tranexamic Acid on Bleeding in Neck of Femur Fractures: A Double Blind Randomized Controlled Study

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Purpose: Neck femur fractures requiring total hip replacement are associated with fatal complications including blood loss and risk of prosthetic joint infection (PJI). Our aim was to determine the safety and efficiency of tranexamic acid (TXA) in post-trauma patients who underwent total hip replacement in a low middle income country setting by evaluating blood loss, need of transfusion, and assessing thromboembolic (TE) risks.

Methods: Our study was a double blind randomized controlled trial with 42 patients allocated in 2 groups: 21 patients received 1 g TXA in 100 mL of normal saline (NS), while the remaining 21 in placebo group received 100 mL of NS; both 30 minutes prior to surgery. Demographics and previous health status together with previous comorbidities, blood loss, drain output within 48 hours, and hemoglobin values before and after surgery were recorded with a 6-month follow-up to evaluate any thromboembolic event, myocardial infarction, and PJI.

Results: The mean age was 59 years versus 52 with 1.3:1 versus 1.5:1 female to male ratio in TXA and placebo group, respectively. The operating time was shortened by 17 minutes in TXA arm ($P = 0.01$) and total blood volume loss was 921 mL in TXA group versus 1406 mL in placebo group ($P < 0.001$), whereas drain output after 48 h postoperatively was 369 mL in TXA versus 401 mL in placebo group ($P = 0.03$). Postoperatively there was a significant decline of hemoglobin level in placebo compared to TXA group (9.19 g/dL vs 10.19 g/dL; $P = 0.03$). There was a 4-fold decrease in blood transfusion in TXA group. Patients with previous comorbidities had 600 mL blood volume loss difference compared to placebo group ($P = 0.01$). Ambulation was initiated 1 day earlier ($P = 0.006$) and a 2-day earlier discharge was noticed in TXA arm. Both groups had no TE event within 6 months.

Conclusion: Tranexamic acid application in patients who underwent total hip replacement secondary due to neck of femur fractures is therefore an effective antifibrinolytic agent with substantial decrease in blood loss. Widespread use of TXA is advised in hip replacement without increasing a risk of myocardial infarction or thromboembolic events.