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# Is local infiltration of tranexamic acid efficacious in reducing blood loss after simultaneous bilateral total knee arthroplasty? A prospective randomized study

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## Abstract

**Background:** Simultaneous bilateral Total Knee Arthroplasty (TKA) results in substantial perioperative blood loss with increased associated morbidity of blood loss. Despite various studies proving the efficacy of Tranexamic Acid (TXA), no consensus exists on the routes of administration.

**Aim:** Aim of present study was to compare the efficacy of local infiltration versus intravenous TXA in reducing perioperative blood loss.

**Methods:** Seventy consecutive ages, sex and BMI-matched patients of knee arthritis undergoing simultaneous bilateral TKA were randomly allocated either to have received intravenous TXA (IVTXA) (Group 1) or topical TXA (TTXA) (Group 2) in a prospective, double blinded study. The primary outcome measures were: Total blood loss and total drain output. The secondary outcome measures were: Number of blood unit's transfused and clinical and functional outcomes as evaluated by Knee Society Score (KSS), WOMAC score, visual analogue score and wound score.

**Results:** All 70 patients were included in the study. Perioperative blood loss in group2 (561.42 ± 248.99) was reduced significantly as compared to group1 (1037.04 ± 506.65) with a p-value of <0.001. Postoperative Hb in group2 (10.30 ± 1.11) was also significantly higher as compared to group1 (9.66 ± 1.47; p <0.001). Total drain output in group2 (269.14 ± 120.98) was significantly reduced as compared to group1 (574.14 ± 269.03; p <0.001). Statistically significant difference was observed in allogenic blood transfusion between the two groups (p=0.000). No complication was observed in either group. Significant difference was observed in WOMAC score at 12weeks and 6months (p=0.015, 0.007) and KSS score at 6 and 12months (p=0.050, 0.045) respectively. However no significant difference was found at 6 weeks.

**Conclusion:** Local infiltration of tranexamic acid significantly decreases the blood loss and improves clinical outcome following simultaneous bilateral total knee arthroplasty as compared to intravenous administration, with a mean reduction by about 45% with respect to intravenous group.

## Biography

Aditya Aggarwal currently is a Professor and Head unit II Department of Orthopaedic Surgery, Post graduate in Institute of medical education and research Chandigarh India. He has vast experience of more than 30 years in his field as researcher, teacher and surgeon. He has published more than 80 publications in journals of repute with more than 700 citations and H index of 15. He is the recipient of SN Baksi Award, AADO Fellowship, Johnson & Johnson Fellowship, and International Fellowship by ISSLS Canada, AADO Scholarship, Trauma Quiz 2002, 3rd Annual Research day award 2014 & 7th Annual Research day award 2019. He has served as a distinguished guest faculty in numerous cadaveric Hip and Knee workshops and has trained young orthopaedic surgeons in the basic skills and nuances of arthroplasty and revision surgeries.

## Publications

1. "Effect of Tracheal Intubation Mode on Cuff Pressure During Retractor Splay and Dysphonia Recovery after for Anterior Cervical Spine Surgery: A Randomized Clinical Trial" by Huang et al August 2020Spine 45(16):E1052 DOI: 10.1097/BRS.0000000000003578
2. Letter to the editor regarding "Intramedullary fixation versus anatomically contoured plating of unstable fractures: a randomized control trial" by Badenhorst et al May 2020International Orthopaedics DOI: 10.1007/s00264-020-04602-0

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