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Use of topical tranexamic acid to reduce blood loss and transfusion rates in patients undergoing primary total hip arthroplasty

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Abstract

Systemic tranexamic acid (TXA) can decrease blood loss and rates of transfusion in patients undergoing total hip arthroplasty (THA). The purpose of this study was to compare the results of blood loss and rates of transfusion among THA patients who did and did not receive treatment with topical TXA. We retrospectively reviewed 135 patients (154 THAs) who received 10 mL of 5% TXA added in a topical cocktail solution during surgery, and 211 patients (234 THAs) who received only the topical cocktail solution. We found that the decrease in Hb was less in the TXA group (1.87±1.10 g/dL) than in the control group (2.2±1.36 g/dL; p = 0.01). The estimated blood loss was less in the TXA group (695±499 mL) than in the control group (819±695 mL; p = 0.041). These 2 factors led to a significant reduction in transfusion rates for the TXA group (17% as compared to 35% in the control group). Further analysis demonstrated that topical TXA significantly decreased the transfusion rate to 15% in patients with preoperative Hb of more than 12 g/dL, and 27% in patients with preoperative Hb of less than 12 g/dL (from 31% and 60%, respectively). With the exception of 1 non-fatal pulmonary embolism in the control group, there were no major complications in the study cohort. Use of topical TXA in patients undergoing THA reduces postoperative bleeding and decreases blood transfusion rates. No increase in thromboembolic or other complications was identified in patients managed with topical TXA.

Biography

Dr. Mel S. Lee is specialized in joint reconstruction and serves as deputy editor of the Formosan Journal of Musculoskeletal Disorders and independent reviewer for peer-reviewed journals such as JOR, JBJS, CORR, J Rheumatology, J Biomechanics, JOSR, etc. He has published more than 100 peer-reviewed articles and 90 symposium papers in the field of joint reconstruction. As a renowned surgeon in his country, he has delivered more than 50 invited speeches and lectures domestically and internationally.