Intra-articular Injection of Tranexamic Acid Reduces Transfusion Rate in Total Knee Arthroplasty

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Introduction
Recent studies reported intraarticular administration of tranexamic acid (IaTXA) in total knee arthroplasty (TKA) reduced transfusion rate, but the optimal regimen is not yet established.

Objectives
The objective of this study was to evaluate efficacy and safety of our regimen.

Methodology
The inclusion criterion was patients undergoing unilateral primary TKA with the diagnosis of primary osteoarthritis, and exclusion criteria were patients with contraindication of IaTXA. The patients were included into two groups - tranexamic acid group (TXA): patients undergoing TKA with IaTXA from March to June 2014 (1gm TXA was directly injected into knee joint after closure of arthrotomy); non-tranexamic group (non-TXA): patients undergoing TKA without IaTXA from March to June 2013 as historical control. All TKAs were conducted by same surgical team with standardized techniques and perioperative management. Demographics, perioperative parameters were collected for comparison. The primary (transfusion rate and volume of drain output) and secondary (thromboembolism complications) outcomes were compared between TXA and non-TXA groups.

Result
A total of 101 patients were included in this study; 49 patients in TXA group and 52 patients in non-TXA group. Both groups were comparable in demographics, perioperative parameters. The TXA group had statistically significant lower transfusion rate (4.1% Vs 23.1%, p=0.005), and the volume of drain output (117ml Vs 397ml, p=0.012). No thromboembolism complications were observed in both groups. It showed our regimen of IaTXA could reduce transfusion rate and postoperative blood loss without increasing complications of thromboembolism.