

EFFECT OF TOPICAL TRANEXAMIC ACID AT DIFFERENT DOSES IN UNILATERAL TOTAL KNEE ARTHROPLASTY

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INTRODUCTION:

Tranexamic acid is used to reduce blood loss in some dental, cardiac and total knee arthroplasty (TKR) surgeries. However, the route of administration, regimen used and dosage are variable (1). This study was conducted to compare the topical effect of tranexamic acid in reducing blood loss in unilateral total knee arthroplasty surgery at 3 different doses (1, 2 and 3 grams).

METHODS:

This was a prospective, randomised, single blinded study involving 57 patients, undergoing unilateral total knee replacement surgery in HUSM. Each patient received a randomised intraarticular dose of either 1, 2 or 3 grams of tranexamic acid before wound closure and tourniquet release. Each patient, was inserted with a drain of size 12 intraarticularly. The preoperative and 48 hours postoperative haemoglobin and haematocrit level, as well as the volume of drain output at 24 and 48 hours were recorded for each patient. For all 3 groups, the mean difference in haemoglobin and haematocrit level between pre and postoperatively and the mean volume of drain output at 24 and 48 hours were calculated and analysed by SPSS version 20.0 and compared using one way ANOVA analysis.

RESULTS:

The mean difference between preoperative and postoperative haemoglobin for group 1, 2 and 3 grams were 1.36g/dL, 1.40g/dL and 1.23g/dL respectively (p value 0.747). The mean difference between preoperative and postoperative haematocrit for group 1, 2 and 3 grams were 4.15%, 4.26% and 4.27% respectively (p value >0.950). The mean volume of drain

output at 48 hours for group 1, 2 and 3 grams were 336.84 mL, 313.68 mL and 263.68 mL respectively (p value 0.195).

Table 1 showing mean difference in hemoglobin level (g/dl) in 3 groups

Group	Mean difference	p-value
1 gram	1.36	0.747
2 grams	1.40	
3 grams	1.23	

DISCUSSIONS:

Our study shows that a low dose of locally applied tranexamic acid (1 gram) can be used instead of a higher dose of 3 grams with the aim to reduce blood loss in unilateral total knee arthroplasty surgery. This will be a further emphasize on effectiveness of topical tranexamic acid with a further cost saving method as compared to previous study (2).

CONCLUSION:

A low dose of topical tranexamic acid is as effective as a higher dose to reduce blood loss in unilateral TKR surgery.

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