Effect of intraoperative local Tranexamic acid on length of hospitalization

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Abstract
Background: This study aimed to compare the effect of local intraoperative administration of tranexamic acid on length of stay (LOS) in the hospital.
Materials and Methods: The study involved 70 patients undergoing prostatectomy. They received 1 gram of tranexamic acid. The LOS was recorded and the data was analyzed using SPSS version 16.
Results: The mean age of the patients was around 70 years. The LOS was not significantly different compared to a group that did not receive tranexamic acid (p=0.058).
Conclusion: This study found that the use of tranexamic acid did not result in a significant difference in length of hospital stay.

Keywords: Tranexamic acids, length of stay, prostatectomy

Introduction
Bleeding, clot formation, infection, and urethral catheter blockage are among the complications of prostatectomy that can lead to extended hospital stays [1]. We are aware that as a surgeon's experience increases, the likelihood of complications following a prostatectomy decreases dramatically (2). Following a radical prostatectomy, blood loss of 700 cc on average is expected [3]. Depending on the size of the prostate, 1 to 32.5 percent of patients on average need a blood transfusion [4]. Controlling bleeding during surgery can lead to a shorter hospital stay because it can raise the risk of myocardial infarction, cerebral ischemia, and renal failure [5]. Numerous studies have shown that tranexamic acid, at various doses, can reduce intraoperative complications [6, 7]. The current study looked into how tranexamic acid affected the stay at hospital following a prostatectomy.

Methods and materials
In this research, 70 patients between the ages of 18 and 80 who were scheduled for open prostatectomy were given Tranexamic acid. Patients were excluded if they had a sensitivity to Tranexamic acid or a blood disorder. A dose of 1 gram of Tranexamic acid diluted in 100 ml of normal saline was administered into the prostate fossa during surgery. The study was approved by the ethics committee (#IR.UMSU.REC.1400.030). Data from the checklist was entered into SPSS version 16 for analysis, and the data distribution was assessed using a histogram. The results presented descriptive statistics for qualitative variables in terms of frequency and percentage, and for quantitative variables, mean and standard deviation were provided. A p-value less than 0.05 was considered statistically significant.

Results
Mean age of patients was around 70 years. Age, body mass index, and length of hospitalization were 60.07±7.44, 25.04±3.44 kg/m2 and 2.34±0.83 days.

Table 1: Mean and standard deviation of age, BMI and LOS

Variable	Mean	SD
Age, year	60.07	7.44
BMI, kg/m2	25.04	3.44
Length of hospitalization, day	2.34	0.83

In this study, the average hospitalization days were 2.34 ± 0.83 days. The average number of hospitalization days of the patients in this study was not significantly different in the recipient group compared to the non-recipient group (P=0.058) (Table 2).

Table 2: Changes of LOS after using Tranexamic acid

Variable	Mean	SD	P value
Length of hospitalization	2.51	1.03	0.058
	2.17	0.53	

Discussion

The purpose of the study was to assess how intraoperative local delivery of tranexamic acid affected the length of hospital stay (LOS) after prostatectomy. An antifibrinolytic agent called tranexamic acid has been used extensively in a variety of surgical procedures to minimize blood loss and the need for transfusions. Its local application during surgery has been suggested as a possible tactic to reduce bleeding and possibly enhance recovery after surgery. There are a few possible reasons for the lack of effect on LOS that has been observed. One possibility is that the 1 gram of tranexamic acid dose was insufficient to have a discernible effect on postoperative outcomes. It might take higher doses or different dosing schedules to notice a noticeable difference. Factors related to surgery: Although a prostatectomy is a major procedure, there may not be sufficient blood loss or need for transfusions for tranexamic acid to significantly impact healing and length of stay. The average age of the study population was approximately 70 years old, which might make it more difficult to identify variations in LOS when compared to younger, healthier patients. Notwithstanding the unfavorable results, this study adds important information to the expanding corpus of research on the clinical usefulness of tranexamic acid in urological procedures. To further elucidate the potential benefits of local tranexamic acid, future prospective studies with larger sample sizes, different dosing strategies, and more detailed assessment of perioperative outcomes may be necessary. It seems that only in some patients, the difference in hemoglobin loss can be considered critical, and otherwise, even in terms of hospitalization time, taking tranexmic acid did not show a significant difference.

Conclusion

This study found that the use of tranexamic acid did not result in a significant difference in length of hospital stay.

References

1. Lepor H, Nieder AM, Ferrandino MN. Intraoperative and postoperative complications of radical retropubic prostatectomy in a consecutive series of 1,000 cases. The Journal of urology. 2001; 166(5):1729-33.
2. Hedican SP, Walsh PC. Postoperative bleeding following radical retropubic prostatectomy. The Journal of urology. 1994; 152(4):1181-3.
3. Catalona WJ, Carvalhal GF, Mager DE, Smith DS. Potency, continence and complication rates in 1,870 consecutive radical retropubic prostatectomies. The Journal of urology. 1999; 162(2):433-8.
4. Djavan B, Agalliu I, Laze J, Sadri H, Kazzazi A, Lepor H. Blood loss during radical prostatectomy: impact on clinical, oncological and functional outcomes and complication rates. BJU international. 2012; 110(1):69-75.
5. Lepor H, Nieder AM, Ferrandino MN. Intraoperative and postoperative complications of radical retropubic prostatectomy in a consecutive series of 1,000 cases. J Urol. 2001; 166:1729-33.
6. Longo MA, Cavalheiro BT, de Oliveira Filho GR. Systematic review and meta-analyses of tranexamic acid use for bleeding reduction in prostate surgery. Journal of clinical anesthesia. 2018; 48:32-8.
7. Ierardi AM, Jannone ML, Brambillasca PM, Zannoni S, Damiani G, Rossi UG, Granata AM, Petrillo M, Carrafiello G. Bleeding after prostatectomy: endovascular management. Gland Surg. 2019; 8(2):108-114.