Original Article

Evaluation of alfuzosin efficacy in reducing postoperative flank pain during voiding in patients with ureteric stent

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Objective: To evaluate the efficacy of alfuzosin in reducing postoperative flank pain during voiding, in patients with ureteric stent.

Methodology: This randomized control trial was conducted at Urology Department, Liaquat National Hospital, Karachi from April to October 2014. Participants of the study were divided into Group A receiving alfuzosin and Group B receiving placebo for 6-weeks duration. Postoperatively, stent-related flank pain during voiding was assessed at the end of the sixth week and a mean score of pain was calculated. SPSS version 21 was used to analyze data, with p≤ 0.05 taken as significant.

Results: A total of 70 patients with a mean age of 33±7.67 years were enrolled in the study. Mean pain score in alfuzosin group was 3.16±1.48 and in the placebo group 5.89±1.52. Among alfuzosin group, efficacy was observed in 24 (68.57%) patients while in the placebo group, in only 5 (14.28%) patients (p<0.01).

Conclusion: The use of Alfuzosin in patients with unilateral stenting significantly improved stent-related urinary symptoms; especially irritative symptoms like pain and flank pain during voiding. (Rawal Med J 202;46:79-82).

Keywords: Ureteric stent, efficacy, flank pain.

INTRODUCTION

Ureteric stents were introduced 4 decades ago by Zimskind.[1] They are used in many of the urological procedures including management of renal and ureteric stones.[2] Ureteral stents are associated with an increased risk of morbidities particularly flank pain during voiding.[3] Bothersome urinary symptoms had been reported in 78% of the patients whereas flank pain during voiding had been reported among 80% of the patients.[4,5] In spite of various attempts, ideal stent could not be developed which could reduce symptoms associated with it.[6,7] Several studies have suggested appropriate length and position of stent.[8] In contrast others have evaluated the effect of intravesical instillation of chemical agents.[9-11]

After insertion of stent, due to mechanical irritation of bladder neck and trigone, it causes symptoms which resemble that of benign prostatic hyperplasia including flank pain during voiding.[9,12] Due to this similar etiology of symptoms it was suggested that the medications which improve benign prostatic hyperplasia symptoms will also decrease stent related symptoms. It has been proposed that selective alpha blockers will also be helpful in reducing stent related flank pain.[12]

In a recent study by Beddingfeild et al, alfuzosin showed efficacy of 47% in patients having flank pain during voiding after insertion of ureteric stent as compared to 10% of the patients who were on placebos.[13] Urolithiasis is the commonest urological problem in Pakistan.[14] However, this effect of selective alpha blocker in reducing flank pain during voiding has not been widely evaluated in our region.[15] Therefore, the present study aimed to evaluate the efficacy of alfuzosin in reducing postoperative flank pain during voiding, in patients with ureteric stent.

METHODOLOGY

This randomized control trial was conducted at the urology department of Liaquat National Hospital, Karachi from April to October 2014. Using WHO sample size calculator, taken efficacy of alfuzosin i.e. P1=47% and placebo i.e. P2=10%, the estimated sample size was 35 in each group. All patients between 15 years to 45 years of age who underwent ureteric stent placement to treat ureteric and renal calculi, with a pain score ≥4, were included in the study. Patients with ureteral trauma, benign prostatic hyperplasia (BPH), urinary tract infection, or those who were pregnant or lactating were

excluded from the study. Ethical approval was obtained and informed written consent was taken from all patients.

The placement of "BOSTON 4.8 Fr" ureteric stent was done by a consultant urologist who had an experience of at least 5 years post fellowship. The participants were then randomized by opaque envelope technique, into two equal groups: Group A and B. The patients in both groups were admitted for 24-hour observation after the procedure. All patients received an intravenous antibiotic (Ceftriaxone 1g), one dose before the procedure and one dose postoperatively. All received oral analgesic (diclofenic sodium 50mg BID) and antispasmodics (Drotaverine 80mg BID). All were discharged after 24-hours.

Group A received alfuzosin 10mg once a day in postoperative period for 6 weeks and Group B received placebo for same duration. Postoperatively, stent-related flank pain during voiding were assessed via Pain Scale, a designed Performa was given to every patient and asked to fill the scale on a weekly basis. At the end of 6 weeks, a follow-up visit was scheduled and the mean of the total scores were calculated. The efficacy was labeled as positive if the mean pain score was less than 4.

Statistical Analysis: Statistical analysis was performed using SPSS version 21. Chi-square test was applied to compare the efficacy in both groups with a $p \leq 0.05$ considered as significant.

RESULTS

Out of 70 participants, 45 (64.3%) were male and 25 (35.7%) female (Table 1). Mean age was 33.06±7.67 years (range 18–45). The characteristics including the age, stone size, duration, and the mean pain score according to the groups are presented in Table 2. Week wise descriptive statistics of pain score are shown in Fig. 1.

Table 1. Distribution of gender in two Groups.

		Number	%	Total
Group A	Male	22	62.9%	35
	Female	13	37.1%	
Group B	Male	23	65.7%	35
	Female	12	34.3%	

Table 2. Age and stone size and duration according to the Groups.

Variables	Overall	Group A	Group B
Age ± SD	33.06±7.67	33.69±7.45	32.43±7.95
Stone size ± SD	1.49±0.40 cm	1.50±0.40 cm	1.48±0.40 cm
Mean±SD duration of Stone	4.53±3.39 weeks	4.47±3.58 weeks	4.31±3.22 weeks
Mean Pain Score		3.16±1.48	5.89±1.52

Fig. 1. Mean Pain Score over six-week duration.

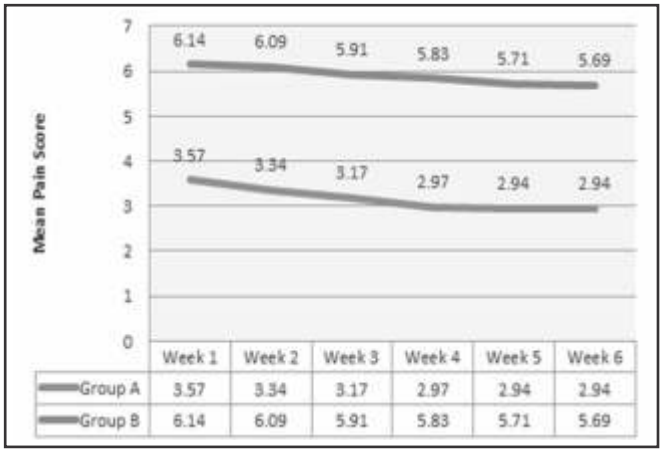
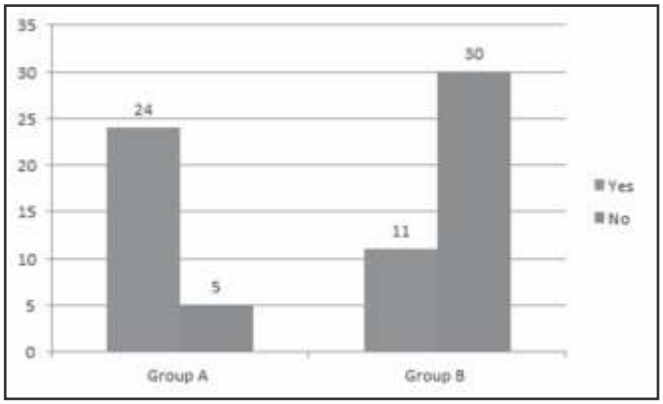


Fig. 2. Efficacy in two Groups.



Alfuzosin efficacy was observed in 24 (68.57%) patients. In the placebo group, efficacy was observed in just 5 (14.3%) patients (Fig. 2). In alfuzosin group, the mean pain score among patients with efficacy was 2.25±0.60 and among patients without efficacy, it was 5.15±0.59. In the placebo group, the mean pain score among patients with efficacy was 3.66±0.15 and among patients without efficacy, it was 6.26±1.31.

DISCUSSION

Alpha-blockers relieve flank pain by decreasing the muscle tone of the ureter, bladder trigone and prostatic urethra by blocking the alpha-adrenergic receptors and thus reducing bladder outlet resistance and pressure during micturition.[16-18] A study demonstrated, improving impact of alpha-blockers including alfuzosin and terazosin on stent-related discomforts, whereas others have concluded that stent discomforts remained unchanged even after administering alpha-blocker or using modified stents.[18-20] In contrast, studies have shown that Alfuzosin can effectively relieve stent-related symptoms.[21]

Similar results were observed in our study with 68.6% efficacy of alfuzosin. A recently published meta-analysis has concluded that the administration of alpha-blockers used alone or in combinations is effective against the discomfort associated with ureteric stent, lowering the morbidity, in the early period of stenting.[12] These results are consistent with earlier studies which suggest that Alfuzosin is effective is relieving flank pain during voiding.[12,18,21]

Our study results are similar to a recently published paper by Shreshta et al who observed that patients who were administered alfuzosin had reduced urinary symptoms including lessened flank pain compared with control group.[22] Beddingfield et al reported that alfuzosin therapy significantly lowers the stent related complications and quality of life.[13] Several oral agents have been reported to relieve the symptoms, including tamsulosin, alfuzosin and tolterodine ER. [23] Oral medication alone was the most efficient for the patients with short-term indwelling stent following URSL.

Our results also showed that the side effects of alfuzosin were scarce in our study subjects. Moreover, most of the side effects such as dry mouth and constipation were mild. A systematic review concluded that alpha-blockers significantly reduced the urinary symptoms, improved the general quality of life, and lessened the pain and patient outcome was dependent upon the duration of stent insertion, patient's age, and stent size.[24] Upon comparing the different alpha-blockers, they observed that alfuzosin and terazosin were more efficacious in relieving flank pain and improving the general health.[24]

One limitation of our study was that male gender predominated in our study. Therefore, one should be cautious in extrapolating our findings to women. The study was single centered therefore; the findings might not be generalizable to larger populations.

CONCLUSION

The use of alfuzosin in patients with unilateral stenting significantly improved stent-related urinary symptoms, especially irritative symptoms like pain and flank pain during voiding. It is therefore recommended that urologists consider prescribing an alpha-blocker to patients with stent placement.

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