

Original article

Role of Tamsulosin in Improving Double-J Ureteric Stent-Related Symptoms

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ABSTRACT

Objective: To evaluate the efficacy of tamsulosin in improving stent-related symptoms and quality of life (QoL) in patients with double-J (DJ) ureteric stents.

Subjects and Methods: A total of 136 patients were prospectively evaluated and distributed randomly in two groups. Group 1 was 69 patients with mean age 35 years (range 20-56) and Group 2 was 67 patients with mean age 29 years (range 19-42). In Group 1, 43 cases had lower and 26 had upper ureteric stones. In Group 2, 47 patients had lower and 20 had upper ureteric stones. Ureteroscopic lithotripsy was performed in all patients and a DJ stent (6F, 26cm) was inserted post-operatively for about 4 weeks. Group 1 received tamsulosin 0.4mg orally once per day for 4 weeks. The patients were evaluated with the International Prostate Symptom Score (IPSS) which consists of seven questions, three for irritative and four for obstructive symptoms. QoL was assessed with the QoL section of the IPSS and the short form 36 (SF-36) questionnaire which assesses patients in eight domains, including physical functioning, role limitations due to physical health or emotional disorders, vitality, mental health, social functioning, pain and general health.

Results: The IPSS irritative and obstructive symptom scores as well as the QoL scores were significantly lower in Group 1 than Group 2 ($p < 0.031$). The SF-36 role limitation due to physical health and pain scores were significantly better in Group 1 than Group 2 ($p \leq 0.027$). There were no significant differences in any other parameters. Five patients with tamsulosin (7.2%) had side-effects in the form of headache and dizziness and the rest of the patients had no side-effects related to tamsulosin.

Conclusion: The administration of a selective alpha1 blocker, such as tamsulosin improves ureteric stent-related urinary symptoms after ureteroscopy and disintegration of ureteric stones.

Key Words: Double-J ureteric stent, Tamsulosin, International prostate symptom score (IPSS), Quality of life (QoL)

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INTRODUCTION

Ureteric stenting plays an important role in upper urinary tract drainage. Urgent indications include obstructive pyelonephritis and intolerable acute renal colic¹. Safety indications following endoscopic procedures include ureteric perforation, edema, «steinstrasse», solitary kidney and transplant kidney². In 1967 Zimskind et al³, used double-J (DJ) ureteric stenting postoperatively and other investigators used it especially after prolonged

endoscopic procedures and in patients needing a second look ureteroscopy⁴. In 2006, Deliveliotis, et al. investigated the role of alpha-blockers for treating the symptoms related to DJ ureteric stenting. They found that treatment with 10 mg alfuzosin once daily for 4 weeks caused a decrease in the mean urinary symptom index, frequency of stent-related pain and improvement in the general health score index⁵.

ROLE OF TAMSULOSIN IN DOUBLE J URETERIC STENTS

The aim of this study was to evaluate the efficacy of tamsulosin in improving stent-related symptoms and quality of life (QoL) in patients with post-operative DJ ureteric stents.

MATERIALS AND METHODS

Between May 2007 and 2010 at Cairo University Hospital, 136 patients with ureteric stones were included in this study. They were evaluated by history taking, clinical examination, laboratory investigations and radiological investigations including intravenous urogram (IVU) or non-contrast spiral Computed Tomography (CT). The exclusion criteria were pregnancy, bleeding disorders, open surgery of the ureter, bilateral ureteric stents, long term use of alpha-blockers, history of prostatitis and chronic use of analgesics.

Ureteroscopic lithotripsy using a pneumatic lithotripter with removal of stones was performed in all patients and a DJ ureteric stent (6F, 26cm) was inserted post-operatively for 4 weeks. The operative procedure was the same in all patients, who were divided into two groups.

Group 1 received tamsulosin 0.4mg orally once per day for Four weeks, ciprofloxacin 500mg twice daily for Five days and paracetamol 400mg on demand. Group 2 received paracetamol 400mg as analgesic on demand and ciprofloxacin 500 mg twice daily for Five days.

Follow-up consisted of plain X-ray film of the urinary tract (KUB) at 24 hours and at one week to exclude stone migration and

Table 1: Characteristics of the study groups

	Group 1	Group 2
Patients (n)	69	67
Age (years)		
Mean	35	29
Range	20-56	19-42
Gender		
Males	44	50
Females	25	17
Stone location		
Lower ureter	43	47
Upper ureter	26	20

assess the clearance of stones. Non-contrast CT or plain radiography was done after 3 weeks to assess the stone free rate. The International Prostate Symptom Score (IPSS) was used to assess the patient's symptoms postoperatively. The IPSS consists of seven questions, three for irritative and four for obstructive symptoms. Quality of life was assessed by the QoL section of the IPSS and short form 36 (SF-36)6 questionnaire.

The SF-36 assesses QoL in eight domains, including physical functioning, role limitations due to physical health or emotional disorders, vitality, mental health, social functioning, pain and general health⁶. Statistical analysis was done using the chi-square and t-test, as appropriate, $p < 0.05$ was considered statistically significant.

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Table 2: International Prostatic Symptom Score (IPSS) and short form 36 (SF-36) scores in the study groups

	Group 1	Group 2	P-value
Irritative symptoms	12.7 (8.3-15.7)	25.8 (22.1-30.1)	<i>P</i> =0.031
Obstructive symptoms	3.8 (1.2-6.8)	12.9 (7.6-17.9)	<i>P</i> < 0.001
Quality of life	5.1 (3.8-6.7)	8.8 (7.3-10.8)	<i>P</i> < 0.001
SF-36			
1. Physical functioning	2.5 (2.4-2.9)	2.24 (2.2-2.6)	NS
2. Role limitations due to physical health	2.1 (1.7-2.5)	1.5 (1.2-1.9)	<i>P</i> =0.0027
3. Role limitations due to emotional problems	2.6 (1.7-2.5)	2.3 (1.9-2.4)	NS
4. Vitality	2.3 (2.1-2.5)	2.1 (1.8-2.33)	NS
5. Mental health	2.5 (2.4-2.84)	2.3 (2.1-2.5)	NS
6. Social function	02.8 (2.7-3.2)	2.7 (2.3-3.1)	NS
7. Pain	2.3 (2-2.5)	1.7 (1.4-2)	<i>P</i> =0.003
8. General health	2.01 (1.7-2.30)	1.7 (1.4-2)	NS

NS: not statistically significant

RESULTS

The patients' age, gender and ureteric stone location are shown in (Table 1).

The IPSS scores were significantly lower in Group 1 than Group 2 (Table 2). The SF-36 scores for role limitation due to physical health and pain were significantly better in Group 1 than Group 2 (Table 2). There were no significant differences in any other parameters.

Five patients treated with tamsulosin (7.2%) had side-effects in the form of headache and dizziness and the rest of the patients had no side-effects related to tamsulosin.

DISCUSSION

Ureteric stents are useful tools in urology but are known to be associated with significant side-effects. Several studies reported the symptoms related to ureteric stents, including

frequency (50-60%), urgency (57-60%), dysuria (40%), incomplete emptying (76%), flank (19-32%) and suprapubic pain (30%), incontinence and haematuria (25%)^{2,7-10}. In a prospective randomized study, Deliveliotis et al evaluated the effect of alfuzosin versus placebo on symptoms and QoL in patients with indwelling ureteric catheters. They concluded that selective alpha-blockers such as alfuzosin improve stent-related symptoms and pain. In addition sexual function and general health were better preserved⁵.

Damiano et al performed a prospective randomized study comparing the efficacy of tamsulosin versus placebo for stent-related symptoms. The stent-related morbidity was evaluated with Urinary Symptom Score Questionnaire (USSQ) QoL questionnaire. The authors reported that tamsulosin had positive effects on stent-related urinary symptoms and QoL¹¹.

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In our study, all patients tolerated the ureteric stents for the 4 weeks postoperative period. The IPSS scores were significantly lower and the QoL scores were significantly better in patients who received tamsulosin. Five patients treated with tamsulosin (7.2%) had side-effects in the form of headache and dizziness and the rest had no side-effects related to tamsulosin.

CONCLUSION

Placement of indwelling ureteric stents has become routine in the management of a variety of urinary tract diseases. Stent-related morbidity is a reality in the majority of patients. The administration of a selective alpha1-blocker, such as tamsulosin improves ureteric stent-related urinary symptoms after ureteroscopy and removal of ureteric stones.

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