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Research Article

Trial to Evaluate the Efficacy of Uroselective Alpha-1 Blockers in Urinary Retention by Benign Prostatic Hyperplasia

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ABSTRACT

Background: Benign prostatic enlargement is one of the main causes of acute urinary retention, various methods are available to treat benign prostate enlargement and acute urinary retention.

Objective: This study was carried out to assess the clinical efficacy of Uroselective alpha-1A inhibitor (tamsolocin) in the treatment of acute urinary retention due to benign prostate enlargement.

Place and Duration: This randomized controlled trial was conducted in the Department of Urology and Kidney Transplantation, Pakistan Institute of Medical Sciences, Islamabad between 23 September 2011 and 23 March 2012.

Materials and Methods: This randomized controlled trial included 120 patients over the age of 50 years, which were randomly divided into two groups, ie, tamsulosin and control group, from 60 patients each. All patients were treated with urethral catheterization and in the treatment group, thamsolocin 0.4 mg once a day for 3 days was administered. The catheter was removed after 3 days of treatment. The successful experience without catheterization after 3 days of treatment was the main outcome measure.

Results:After catheter removal, generally 44.1% (53/120) of patients voided successfully completed. The efficacy was much better at 58.3% (35/60) in the thamsolocin group compared to 30% (18/60) in the control group (P = 0.003).

Conclusion: Treatment with tamsolosin was a greater success rate in voiding below the catheter after a loop of acute urine retention. The patient's age and urine volume were significantly affected by the time of catheterization.

Keywords: Urine retention, urinary catheterization, prostate enlargement, mortality, morbidity

INTRODUCTION:

Men in the eighth decade of life are often present with the inability to empty urine voluntarily, and this condition is known as acute urinary retention (UR). Sudden onset leads to pain and discomfort [1]. A common and painful urinary tract emergency is one of the common complications of benign prostatic hyperplasia (BV). The risk increases with age increase and they have a 10% chance of ur in the next five years.The precipitating AUR has events such as urinary tract infection (UTI), non-prostate related surgery such as surgeries or perineum, pain, anesthesia, ingestion of anticholinergic drugs or sympathetic action, antihistamines, etc. But mostly, there is no such a previous event, due to enlarged prostate (EP) due to BPH. This condition is referred to as

spontaneous AUR (sAUR) [2]. and a wall incidence is estimated at 37%. 1 sAUR is a common indicator of transurethral removal of the prostate (TURP) in patients with BPH. 20-42% of men who undergo TURP have the main indicator of surgery. Urinary administration involves immediate pressure of the urinary bladder usually by urethral catheter Foley or bladder hole above the pubic if the urethral catheter is not possible 2, 3, 4 Since the surgeries are an emergency always require a catheter to reduce urinary retention, and then most of these patients require prostate surgery Such as TURP 2,3,4 Prostate-related prostate surgery is associated with complications surrounding surgery and increased morbidity and mortality of the patient. Furthermore, the presence of urethral catheterization can lead to increased risk of urosepsis and bleeding in patients undergoing TURP [3].

This indicates the importance of measures that can lead to early catheterization of free self emptying and delayed surgery in sur patients. One alternative option is to provide the patient with an early experience without a catheter (twoc) that may allow the patient to spontaneously discharge and therefore surgery can be delayed.8,10,10 thousand blockers (α-blocker) can make the tuk more successful in these patients. The evidence has shown that 48% of the cases with Sur have a successful tuk when given α-blocker (tamsolocin) against only 26% successful experience when no drugs are given to patients. 10 non-selective α blockers had some systemic side effects that were the main cause of drug non-compliance and cessation of treatment. However, with the advent of alpha-ouroslective blockers or alpha-1A blocker (α-1A blocker) such as tamsolocin, most systemic side effects of α blockers are reduced [4]. We aimed to evaluate the role of α-1A blockers in increasing the success rate of TWOC after sAUR. This would help improve the overall management of patients with surges and their potential outcomes by reducing morbidity and mortality associated with surgery on catheter patients and especially in the elderly population. Similarly, it will reduce the burden of outpatients and shrink heavy theater lists In a hospital if more and more patients can self-void, do not need urethral catheterization and surgery for benign hypertrophy of the prostate [5].

MATERIALS AND METHODS:

This randomized controlled trial (RCT) was conducted in the Department of Urology and Kidney Transplantation, Pakistan Institute of Medical Sciences, Islamabad between 23 September 2011 and 23 March 2012 (6 months). The objective was to evaluate the results of TWOC provided along with tamsolocin compared to controls in patients with AUR because of BPH. Both groups of the study had catheterization for urinary retention, but the treatment group offered alpha-blocker for its effectiveness after catheter removal after three days.A total of 120 patients over 50 years were included in the study after 100 cases were excluded. We included all patients who met the study criteria during the study period. The Protocol was approved by the Institutional Audit Committee.Data were collected from patients after taking informed consent, through a standardized model.

All patients were assessed by history and performed thorough examination including DRE and ultrasound. Patients with sAUR were administered by passing the foley catheter into the urethra and the group was randomly assigned on the basis of the lottery method. Patients in group A were additionally given 0.4 mg of oral thamsolucin for three days. Patients were then given aTWOC after 3 days. The main outcome measure was a successful TWOC vision. Successful TWOC frequencies were measured in the tamsolocin group and the control group. Those who have failed results have been re-catheterized and administered accordingly.Statistical considerations: The data was analyzed with the help of SPSS version 13.0. Demographic data was calculated for any age patients, and urine volume was depleted at the time of catheterization and prostate size. The chi-square test was applied to compare toc with or without thamsolucin. The value of p 0.05 0.05 was considered significant.

RESULTS:

A total of 120 patients were included in the study. After urethral catheterization, 60 cases received thamsolocin while the remaining 60 did not provide any medication (controls). The patient's characteristics are shown at the baseline in Table I. Patients aged 55-90 years with an average age of 68.6 ± 10.1 years. The mean age of patients in the thamsolucin group was 67.5 years while in the control group 71.8 years.

Table I: Age of patients in the two study groups

	Tamsulosin group (n=60)	Control group (n=60)	p-value
Age categories (years)			
55-60	21 (35.0%)	20 (33.3%)	0.81
61-70	13 (21.6%)	16 (26.6%)	
71-80	14 (23.3%)	16 (26.6%)	
81-90	12 (20.0%)	8 (13.3%)	
Age (mean + SD)	67.5 + 8.5	71.8 + 11.6	0.37

The mean urine volume at the time of the catheter was 833.3 ± 249.4 mL with a value of not less than 500 and a maximum of 1300 ml. The mean urine retention was 644.3 mL in the thamsolocin group compared to 983.8 ml in the control group. This difference was statistically significant between the two groups (p-value = <0.001)

Table II: Comparison of mean prostate size and urinage drainage between study groups

	Tamsulosin group (n=60) Mean ± SD	Control group (n=60) Mean ± SD	p-value
Prostate size (grams)	55.7 ± 12.8	56.9 ± 13.1	0.23
Mean volume of urine drainage (mls)	644.3 ± 255.6	983.8 ± 213.7	<0.001

The average prostate size was 55.7 + 12.8 in the thamsolocin group and 56.9 + 13.1 grams in the control group, which was found comparing groups. The average prostate size was generally 57.4 ± 12.3 grams in the study (range: 38 to 85 grams).

In general, in the study after catheter removal, 53 (44.2%) patients successfully revoked. Among these groups, 35 patients (58.3%) died successfully compared with 18 (30.0%) in the control group. This difference was statistically significant (P = 0.003). (Table III)

No significant adverse events were observed during the treatment period. In general, minor adverse events such as headache, dizziness and constipation have been reported.

The above negative events were seen in patients in both groups. However, it does not require any treatment.

Table III: Comparison of outcome of TWOC between the two groups

	Tamsulosin group (n=60)	Control group (n=60)	p-value
Voiding status			
Successful	35 (58.3%)	18 (30.0%)	0.003
Unsuccessful	25 (41.7%)	42 (70.0%)	

DISCUSSION:

There are high differences within and among countries in AUR Treatment, administration in terms of type and duration of catheterization, hospital admission, TWOC, emergency or delayed surgery.In the current study, the role of selective alpha-blockers (TMS) in patients with BPH was assessed with AUR. The hypothesized hypothesis at the beginning of the study proved to be correct. The study showed that patients receiving tamsolosin before catheter removal discharged more successfully than those who did not receive any medication prior to TWOC. In this study, the success rates of the tamsulosin group were 58.3% and the control group from 30% was slightly higher in volume than in previous studies.

In patients with acute urinary retention, patients with acute urinary retention showed success in both alfuzocin and thamsolucin groups (66% and 70%, respectively) compared to 36% in control group 11. In another study by Maldonado-Avila M, 43.2% of the patients in the thamsolucin group and 26.2% in the placebo group were fatal and the TWOC was successful.Similarly, Success of emptying <100 mL in 33.8% of patients taking tamosolucin compared with 24.3% of patients on placebo. However, the need for re-anesthesia after TWOC was significantly lower in the thamsolucin group than the second group (49.3% vs 70.0%, p-value = 0.01).

Hua lx and others have seen that after catheter removal 61% patients receiving tamsolucin are successfully voided Compared to 28% of patients in the control group (p-valo = <0.01). Pandet RK and others reported that 68.9% of their patients were Successful TWOC using Alpha 1 blocker before to TWOC.McNeil SA, reported that successful TWOC was achieved in 55% of patients treated with alfuzocin compared with 29% in the second group (p = value = 0.03). In a study by Noor Lee and others TWOC successful on day 3 (first follow-up) and day 6 (follow-up second) were (76%) and (79.0%) respectively. This comparative evidence has demonstrated the results of the current study, and also reflects the effective role of tamsulocin in AUR management.

Overall, the TWOC rate of failure is estimated at 55.8%, which is very high. This can be due to late presentation of patients with BPH in our setup, drug non-compliance, and psychosocial habits, possibly because of a short period of catheterization that was only 3 days in my studies. Although the majority recommends a three-day period of catheterization, some studies suggest that an increase in the catheterization period before the TWOCis given; [8] Comparison of the variables registered among those who had a successful TWOC for those who had a failed experience, it was observed that age and volume of urine retention significantly affected the results of TWOC. These results have been suggestive of recent reports that increased age is a risk factor for AUR, subsequent failure of TWOC after AUR and bad outcomes after BPH related surgery.

This risk of UR and poor outcomes of TWOC and surgery with age increase may be related to an increased incidence of prostate obstruction associated with aging and age-related decline in detrusor constriction. Two previous studies as well Concluded the relationship between age and successful TWOC.17.18 The volume of urine drained at the time of the catheter is another factor affecting the outcome. Large volumes of urine retention lead to further expansion, and therefore

resulting atonicity, TWOCshould be avoided if the volume of urine retention is greater than 900 ml [10].

Similarly, the volume of urinary retention of less than 1 liter was associated with a good chance of successful voiding after catheter removal, but he recommended a period of long-term catheterization if the size of volume is > 1.3 L. In the current study also, patients with retention volumes of> 1.0 L Never successfully eliminated the importance of large volume of urine retention as another important factor in determining AUR and TWOC results [11].The size of the large prostate is determined as another risk factor for TWOC failure after acute urine retention and thus, may be a useful indicator of the outcome after retention. However, in this study the size of the prostate did not affect the results of TWOC where the average prostate size between tamsolucin and control group was comparable: 57.1 vs. 5.6.6 g, respectively.

Transcetal Ultrasonic assessment of the prostate assessment may have a greater predictive value and should be an alternative in future studies.The study also showed some negative and sometimes non-serious adverse events, with tamsulosin intake, including dizziness, headache, constipation, etc. The problems related to catheterization such as leakage, discomfort, etc., but these did not ask for any type of treatment.Similarly sending patients home with a catheter at the site was safe and effective and was not associated with a major problem for patients. It is clear from previous studies also that sending patients with AUR to home for a short period of time after urethral catheterization is safe to be followed afterwards, to TWOC and re-evaluate the possibility of having surgery or further treatment.

CONCLUSION

In conclusion, this study provides evidence that the 1-alpha-blocker thamsolucin blockers for 3 days while in situ urethral catheterization is beneficial and safe in the AUR-treatment associated with BPH. In addition, it provides further evidence that the age of patients is an important factor in determining which administration is most appropriate after AUR. While treatment with alpha-1 Uroslective blockers may not eliminate the need for surgery in all men who provide with ur, the lower the numbers that are sent to the home with the urinary catheter at the site for a short period of time and then remove it, as it may reduce morbidity and postoperative mortality, and it is more comfortable and convenient for patients.It appears that the volume of urinary retention in the primary catheter is also useful in identifying patients who can be at risk of recurrent AUR. Prior to circulating the results of our study we suggest that other large-scale studies on the use of alpha-1 uroslective blockers can be conducted with rigorous research methodologies.

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