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ORIGINAL ARTICLE

DETERMINATION OF THE EFFECT OF ALFUZOSIN IN PATIENTS WITH ACUTE URINARY RETENTION SECONDARY TO BENIGN PROSTATIC ENLARGEMENT

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ABSTRACT

Background: Lower urinary tract symptoms are the most common reason for elderly males presenting to the hospital. Acute urinary retention previously considered as an absolute indication for surgery is now being challenged by alpha blockers.

Methodology: This descriptive study was done at Aga Khan Hospital and Shalamar Hospital over a three year period. Using convenience sampling 270 patients were registered and out of them 172 patients were selected on basis of inclusion and exclusion criteria. The selected patients were catheterized and were put on Alpha Blockers.

Results: Showed that 102 (59.5%) were able to void after catheter was removed, while 70 (40.5%) had to be catheterized again and planned for surgery.

Conclusion: Our study has shown that acute urinary retention is no longer an indication for immediate surgery and a trial without catheter with alpha blockers should be attempted.

Keywords: BPH, AUR, ALFUZOSIN, TURP.

INTRODUCTION

Lower urinary tract symptoms (LUTS) and benign prostatic hyperplasia (BPH) are very common among aging men.[1] Risk factors for acute urinary retention include old age, increased prostate volume, postvoid residual volume, severe Lower urinary tract symptoms and reduced peak urinary flow rate.[2] From a large cohort of 2115 community dwelling men aged 40 – 79 years in Minnesota (USA), it was estimated that a 60 year old man had a 23% probability of experiencing an episode of acute urinary retention if he survived another 20 years.[3]

The management of retention of urine is by passing a catheter to drain the bladder and relieve the symptoms of obstruction, the subsequent and definite management thereafter is not standardized. Acute urinary retention is one of the end points of complications of Lower urinary tract symptoms, secondary to benign prostatic hyperplasia or may even be the initial presentation. This was previously considered an absolute indication for the patient to undergo Trans urethral resection of prostate (TURP). Alpha – Blockers have become the mainstay of the medical treatment of Lower urinary tract symptoms suggestive of benign prostatic obstruction (BPO). Their beneficial effects are a result of smooth muscle relaxation in the prostate capsule and the bladder neck and the preprostatic urethra.

MATERIALS AND METHODS

This Descriptive study was conducted in the Urology departments of the Aga Khan University Hospital Karachi and Shalamar medical and dental college Hospital Lahore. The duration of the study was 3 years. Total number of 270 patients were registered using convenient sampling. Out of 270 patients, 172 patients were selected by using following inclusion and exclusion criterias. The inclusion criteria was male patients older than 50 years who came to the hospital with painful acute urinary tract and male patients with post catheterization volume of 400 – 1000.

Those patients who had Neurogenic bladder proven or suspected, Carcinoma of the prostate suspected or proven, urinary tract infection including prostatitis, confirmed or suspected urethral stricture, history of prostatic or urethral surgery, pelvic surgery and painful anal conditions and patients already on alpha blockers were excluded.

Those patients who fulfilled the inclusion criteria and exclusion criteria were enrolled for the study. History of constipation urinary tract infection, functional class, previous medication and comorbids were recorded. Baseline ultrasound performed from Radiology department. All the patients were catheterized and started on α-blockers and called in the clinic minimum 36 hours after starting α-blockers for a trial without

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catheter.

RESULTS

A total of 270 patients were selected and out of them 98 patients were excluded giving a total study population of 172 patients. The mean age was 65.1 with SD ± 9.5 years as shown in table 1. The mean residual volume was 713.3 ml with SD ± 149.7 ml as in table 2. Majority (56.1%) patients in our study were functional class I, 47% were functional class II and only one patient was functional class III. Trial without catheter was successful in 59.5% of patients while 40.5% failed trial without catheter as shown in table 3. When group statistics were applied using re-catheterization as the main outcome with the T-test dividing the sample into two groups that is successful and unsuccessful:

- No significant difference was noted in functional class of two groups.
- No significant difference was noted in the age distribution of the 2 groups.
- No significant difference was noted in the residual volume of the 2 groups.
- No significant difference was noted in the interval between onset of retention and catheterization of the 2 groups.
- Significant difference was noted in the duration of Lower urinary tract symptoms of the 2 groups meaning that the patients who had lower urinary tract symptoms for a longer duration had more successful trial without Catheter as below in table 4.

Table 1: *Age of the patients in years n = 172.*

Mean	65.06
SD	9.47
Minimum	50
Maximum	86

Table 2: *Residual volume (ml), duration between retention and catheterization (hours) and duration of Lower Urinary Tract Symptoms (weeks).*

	Residual Volume at Catheterization	*Interval Retention and Catheterization*	*Duration of Lower Urinary Tract Symptoms in Weeks*
Mean	713.3	7.1	88.3
Std. Deviation	149.7	2.1	56.7
Minimum	500	4	4
Maximum	1000	16	208

Table 3: *Need for re-catheterization following Trial without Catheter.*

	Frequency	*Percent*
No	102	59.5%
Yes	70	40.5%
Total	172	100%

Table 4: *Duration of Lower Urinary Tract Symptoms prior to acute urinary retention.*

Re-catheterized	N	Mean (weeks)	Std. Deviation	Std. Error Mean	p value
No	102	149	63.00	10.80	0.012
Yes	70	69.50	42.15	7.695	

DISCUSSION

Acute urinary retention is a significant public health issue as all patients with acute urinary retention will need medical health attention, the standard management is for the patient to be catheterized and either admitted to the hospital, which increases the cost. Alternately the patient is put on discharged care with its attendant problems. Acute urinary retention in certain setups is considered an absolute indication for prostatic surgery,[4] the others being recurrent urinary tract infections, secondary bladder stones, deterioration of renal functions, de-compensation of the bladder i.e. diverticulum formation, failure to respond or tolerate medical therapy, and bleeding from the prostate. So if this protocol is followed it would put a significant load on the health system.

Alpha blockers have been effectively used in the treatment of acute urinary retention with different but significant numbers of success.[5-9] There is dearth of local data to guide the management of acute urinary retention. Hence the aim of our study was to prospectively determine the effect of ALFUZOSIN in patients with acute urinary retention secondary to benign prostatic obstruction.

In table 1, the mean age of patients in our sample was 65.1 years with a minimum age of 50 and a maximum of 86 years. Histological changes of Benign Prostatic Hyperplasia start by the age of 40 years as shown by previous studies.[10,11] In a study[12] the average age was 70.6 and they had noted that most of their patients were retired. In another study it was stated that retention was rare in men less than 60 years.

In table 2 we have presented the significance of the residual volume at catheterization. This is a very important variable as it is important in excluding patients who might have a neurogenic bladder. These patients commonly have a large capacity indicating atonicity of the bladder wall. Hence in our inclusion criteria we specified that only patients who have a painful retention and a residual volume of 400 – 1000 ml will be included, similarly patients who have a very small capacity bladder also might have an increased chance of having an irritable bladder hence the lower limit was set to 400 ml. In a previous study,[13] patients who had a catheterization residual volume of more than 1000 ml were at a high risk of failure of trial without catheter. However in our study we noticed that the residual volume at catheterization 713.3 ml with SD ± 149.7 ml as we had already excluded the patients who had a residual volume of more than 1000 ml.

The other variable discussed in the table 3 is the interval between onset of retention and catheterization. If the patient stays in retention for a long time and the bladder is distended the detrussor muscle would become over distended and the inherent strength of the detrussor might take about two weeks to return. The mean interval between retention and catheterization was 7.1 hours with SD ± 2.1 hours with a minimum of 4 hours and a maximum of 16 hours.

Another variable discussed in table 4 is the duration of lower urinary tract symptoms. This shows the chronicity of the disease with possible effects on the bladder and the lower urinary tract. The mean duration of the symptoms was 88.3 weeks with a standard deviation of 57 weeks, with a minimum of 4 weeks and a maximum of 208 weeks.

In table 3 we considered the main outcome of our study that is the need for re-catheterization. The patients who were catheterized were those who again developed urinary retention and thus failed trial without catheter. In our study we found that 59.5% of the patients had a successful trial without catheter meaning that ALFUZOSIN was effective in these patients, while 40.5% of our patients failed a trial without catheter. If as in the past when acute urinary retention was considered an absolute indication of trans urethral resection of prostate., all of our patients would have undergone prostatic surgery, but with a trial without catheter and ALFUZOSIN 59.5% of our patients were saved of avoided the prostatic surgery which in our centre is trans urethral resection of prostate. Other international studies found trial without catheter to be successful in 80%,[14] 55%,[15] 50%,[16] 63%.[17]

From table 4 correlated the main out come that is need for re-catheterization that is failed trial without catheter, with patient and disease related factors.

In table 4 we considered the duration of lower urinary tract symptoms as an independent variable for successful trial without catheter. The duration of symptoms might lead to some changes in the bladder and the lower urinary tract itself causing an affect on the trial without catheter. Interestingly we found that the patients who had a successful trial without catheter had duration of Lower Urinary Tract Symptoms. For a mean of 149 ± 63 weeks. Those who failed a trial without catheter had duration of symptoms of mean 69.5 weeks ± 42. weeks. (p value 0.012), which is statistically significant.

Our study has shown that acute urinary retention is no longer an absolute indication for trans urethral resection of prostate, and that more than half of the patients would be able to return to their normal voiding practices in a short term follow up if started on ALFUZOSIN and will be saved from the possible complications and morbidities of surgery with a catheter in place. Further research is required into why our population developed early acute urinary retention compared to the international literature, and the true factors affecting this early problem need to be identified and if these factors are preventable it would be of use to the community.

Our study ***concluded*** that 59.5% patients with acute urinary retention receiving ALFUZOSIN had a Successful trial without catheter. In our study acute urinary retention affected younger men compared to the literature. We found that duration of lower urinary tract symptoms was significantly inversely proportional to the success of trial without catheter. Over all this study has added to the evidence that acute urinary retention is not an absolute indication for immediate trans urethral resection of prostate.

Conflict of Interest

The authors declare no financial or non financial conflict of interests.

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REFERENCES

1. Wei JT1, Miner MM, Steers WD, Rosen RC, Seftel AD, Pasta DJ, Carman WJ, Roehrborn CG; BPH Registry Steering Committee. Benign prostatic hyperplasia evaluation and management by urologists and primary care physicians: practice patterns from the observational BPH registry. J Urol. 2011 Sep; 186 (3): 971-6.
2. Fitzpatrick JM1, Desgrandchamps F, Adjali K, Gomez Guerra L, Hong SJ, El Khalid S, Ratana-Olarn K; Management of acute urinary retention: a worldwide survey of 6074 men with benign prostatic hyperplasia. Reten-World Study Group. BJU Int. 2012 Jan; 109 (1): 88-95.
3. Fukuta F, Masumori N, Mori M, Tsukamoto T. Incidence and risk of treatment for benign prostatic hyperplasia in Japanese men: a 15-year longitudinal community – based study. Int J Urol. 2013 Jan; 20 (1): 100-6.
4. De Nunzio C1, Autorino R, Bachmann A, Briganti A,

Carter S, Chun F, Novara G, Sosnowski R, Thiruchelvam N, Tubaro A, Ahyai S. The diagnosis of benign prostatic obstruction: Development of a clinical nomogram. EAU Young Academic Urologists BPH Group Arnhem, The Netherlands. Neurourol Urodyn. 2014 Dec. 18.

5. Marshall JR, Haber J, Josephson EB. An evidence – based approach to emergency department management of acute urinary retention. Emerg Med Pract. 2014 Jan; 16 (1): 1-20.
6. Fisher E, Subramonian K, Omar MI. The role of alpha blockers prior to removal of urethral catheter for acute urinary retention in men. Cochrane Database Syst Rev. 2014 Jun.
7. Skolarikos A, Tyritzis S, Stamatiou K. Cholinergic drugs for treatment of recurrent urinary retention in high surgical risk / elderly BPH patients. A pilot study. Minerva Urol Nefrol. 2012 Sep; 64 (3): 209-16.
8. Cullen IM, Dowling CM, Thornhill JA, Grainger R. Emergency management of acute urinary retention: results from an all – Ireland urologist practice survey. Ir J Med Sci. 2013 Jun; 182 (2): 207-11.
9. Hallan SI, Kwong D, Vikse BE, Stevens P. Use of a prostate symptom score to identify men at risk of future kidney failure: insights from the HUNT II Study. Am J Kidney Dis. 2010 Sep; 56 (3): 477-85.
10. Schenk JM, Hunter – Merrill R, Zheng Y, Etzioni R, Gulati R, Tangen C, Thompson IM, Kristal AR. Should modest elevations in prostate – specific antigen, International Prostate Symptom Score, or their rates of increase over time be used as surrogate measures of incident benign prostatic hyperplasia? Am J Epidemiol. 2013 Sep 1; 178 (5): 741-51.
11. Stroup SP, Palazzi-Churas K, Kopp RP, Parsons JK. Trends in adverse events of benign prostatic hyperplasia (BPH) in the USA, 1998 to 2008.
12. Chen JS, Chang CH, Yang WH, Kao YH. Acute urinary retention increases the risk of complications after transurethral resection of the prostate: a population – based study. BJU Int. 2012 Dec: 110.
13. Kingo PS, Ryhammer AM. Acute urinary retention in a young woman with Lyme borreliosis. Ugeskr Laeger. 2014 Dec.
14. Geitona M, Karabela P, Katsoulis IA, Kousoulakou H, Lyberopoulou E, Bitros E, Xaplanteris L, Papanicolaou S. Dutasteride plus tamsulosin fixed – dose combination first – line therapy versus tamsulosin monotherapy in the treatment of benign prostatic hyperplasia: a budget impact analysis in the Greek healthcare setting. BMC Urol. 2014 Sep 26; 14: 78.
15. Lo KL, Chan MC, Wong A, Hou SM, Ng CF. Long-term outcome of patients with a successful trial without catheter, after treatment with an alpha-adrenergic receptor blocker for acute urinary retention caused by benign prostatic hyperplasia. Int Urol Nephrol. 2010 Mar; 42 (1): 7-12.
16. Kumar S, Tiwari DP, Ganesamoni R, Singh SK. Prospective randomized placebo – controlled study to assess the safety and efficacy of silodosin in the management of acute urinary retention. Urology. 2013 Jul; 82 (1): 171-5.
17. Li MC, Wang ZY, Yang J, Guo XL, Wang T, Wang SG, Liu JH, Ye ZQ. Efficacy and safety of solifenacin plus tamsulosin oral controlled absorption system in men with lower urinary tract symptoms: a meta-analysis. Asian J Androl. 2014 Sep 23.