

EFFECTS OF TAMSULOSIN FOR BENIGN PROSTATIC HYPERPLASIA

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ABSTRACT

Benign Prostatic Hyperplasia (BPH) is a common disease experienced in around 50% of elderly males. Patients with BPH suffer moderate to severe lower urinary tract symptoms (LUTS). Several grading systems such as the International Prostate Symptom Score (IPSS) and Quality Of Life (QOL) have been used to assess the effectiveness of Tamsulosin. Tamsulosin is α -1A adrenoceptor antagonist which acts on the prostate smooth muscles and bladder neck thus relieving the urinary symptoms and flow in men with BPH. Adverse effects are mild so it remains the main treatment option for men suffering from BPH. A cross sectional study was done in the Department of Urology from July 2014 to June 2016. The aim of this study was to find out the effectiveness of Tamsulosin in BPH and to compare the IPSS, QOL and Post Void Residual Urine (PVRU) before and after treatment. There were total of 242 patients receiving Tamsulosin with minimum two follow ups (3 monthly). 37.2% of the patients were in the age group 50- 59 years. At the end of 6 months, the number of patients with mild symptoms (IPSS) increased from 32.2% to 62.8% and severe symptoms dropped from 25.6% to 12.4%. There was significant improvement in the QOL of patients after taking Tamsulosin. The number of patients who were in the unhappy group decreased from 49.6% to 29.3%. Similarly, PVRU (less than 50 ml) improved from 38.5% to 58.7%.

In conclusion, Tamsulosin showed a stronger improvement tendency in IPSS, QOL and PVRU.

KEYWORDS

Benign prostatic hyperplasia (BPH), international prostate symptom score (IPSS), post void residual urine (PVRU), quality of life (QOL), tamsulosin

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INTRODUCTION

Benign prostatic hyperplasia (BPH) is a nonmalignant enlargement of the prostate gland and it is almost unavoidable in elderly men. The prevalence of BPH rises to more than 50% at 50 years of age to as much as 90% at the age of 85 years.¹ A greater number of awareness of BPH among both patients and healthcare professionals is likely to increase the number of people presenting for treatment. BPH clinically manifest as lower urinary tract symptoms (LUTS) consisting of irritative and obstructive symptoms.^{2,3} The severity of LUTS can be assessed by International Prostate Symptom Score (IPSS). It is also a useful tool for follow up of patient's symptoms over time.¹ It also has negative effects in the quality of life in men.⁴ The treatment goal for men with BPH is to relieve these bothersome symptoms.

Improving the quality of life (QOL) and post void residual urine (PVRU) in patients with BPH is an important aspect and Tamsulosin serves this purpose.⁵ Tamsulosin is a uroselective α_1 A adrenoceptor antagonist which acts on the prostate smooth muscles and bladder neck. It provides improvement in urinary symptoms and flow in men with BPH.^{4,6} Effectiveness increases with long term administration of Tamsulosin.⁶ Because of its minimal side effects, it can be recommended in the treatment of BPH, thus reducing the need for re catheterization and surgical intervention.^{3,4}

The purpose of this study was to find the effectiveness of Tamsulosin in BPH. The study also aims to compare the IPSS, QOL and PVRU before and after treatment.

MATERIALS AND METHODS

This is a cross sectional study done in the Department of Urology, NMCTH from July 2014 to June 2016. The aim of this study was to find out the effectiveness of Tamsulosin in benign prostatic hyperplasia in relation to reduction of LUTS. It also aims to compare the IPSS score and PVRU before and after tamsulosin use and assess the QOL.

Inclusion criteria were: All male patients 50 years and above presenting to Urology OPD with LUTS-BPH, BPH confirmed by digital rectal examination (DRE) and ultrasound (USG) and receiving Tamsulosin with minimum two follow ups (3 monthly).

Exclusion criteria were: Male patients less than 50 years and receiving Tamsulosin for less than 3 months or those who skip the treatment in between.

Data was collected in a Proforma. USG, DRE finding and IPSS, QOL, PVRU before and after treatment was noted. Data was then analyzed manually.

Ethical clearance for the study was taken from NMCTH Institutional Review committee.

RESULTS

There were total of 242 patients receiving Tamsulosin with minimum two follow ups (3 monthly). The oldest patient was 83 years and the youngest was 50 years with mean age 65.07 years. Out of 242 patients, there were 37.2% in the age group 50- 59 years and only 7.4% patients were more than 80 years of age. (Table 1)

Table 1: Patients receiving Tamsulosin in different age group

Age group (years)	Number of patients	Percentage (%)
50-59	90	37.2
60-69	61	25.2
70-79	73	30.2
>80	18	7.4
Total	242	100

BPH was confirmed by DRE and USG. These patients were then assessed by IPSS, QOL, USG and PVRU in their first visit and subsequently in 3 months and 6 months. Table 2 shows the IPSS and table 4 shows QOL on the basis of which patients were assessed. Scores were as follows:

Mild: 1-7 Moderate: 8-19 Severe: 20-35

Table 2: International Prostate Symptom Score (IPSS)

	Not at all	Less than 1 in 5 times	Less than half the time	About half the time	More than half the time	Almost always	Score
1. Incomplete Emptying How often have you had the sensation of not emptying your bladder?	0	1	2	3	4	5	
2. Frequency. How often have you had to urinate less than every two hours?	0	1	2	3	4	5	
3. Intermittency. How often have you found you stopped and started again several times when you urinated?	0	1	2	3	4	5	
4. Urgency. How often have you found it difficult to postpone urination?	0	1	2	3	4	5	
5. Weak Stream. How often have you had a weak urinary stream?	0	1	2	3	4	5	
6. Straining. Had to strain to urinate?	0	1	2	3	4	5	
7. Nocturia. Number of times got up at night?	0	1	2	3	4	5	

The differences in the IPSS, QOL USG grading of prostate and PVRU is shown in Table 3,5,6 and 7.

Table 3: IPSS before and after treatment

IPSS Score	Number of patients		
	1st visit	1st Follow up (3 months)	2nd Follow up (6 months)
Mild (0-7)	78 (32.2%)	92 (38%)	152 (62.8%)
Moderate (8-19)	102 (42.2%)	98 (40.5%)	60 (24.8%)
Severe (20-35)	62 (25.6%)	52 (21.5%)	30 (12.4%)
Total no. of patients	242 (100%)	242 (100%)	242 (100%)

Table 4: Quality of life (QOL) due to urinary symptoms

Quality of Life Due to Urinary Symptoms D	Delighted	Pleased	Mostly satisfied	Mixed	Mostly dissatisfied	Unhappy	Terrible
If you were to spend the rest of your life with your urinary condition just the way it is now, how would you feel about that?	0	1	2	3	4	5	6

Table 5: Quality of life (QOL) before and after treatment

QOL	Number of patients		
	1st visit	1st Follow up (3 months)	2nd Follow up (6 months)
0	0 (0%)	0 (0%)	0 (0%)
1	0 (0%)	0 (0%)	0 (0%)
2	0 (0%)	0 (0%)	40 (16.5%)
3	20 (8.3%)	42 (17.4%)	58 (24.0%)
4	96 (39.6%)	90 (37.2%)	72 (29.8%)
5	120 (49.6%)	108 (44.6%)	71 (29.3%)
6	06 (2.5%)	02 (0.8%)	01 (0.4%)
Total	242 (100%)	242 (100%)	242 (100%)

In the first visit, patients presenting with mild symptoms were 32.2%, with moderate symptoms were 42.2% and with severe symptoms were 25.6%. After 3 months of Tamsulosin treatment, there was rapid increase in the number of patients with mild symptoms and decrease in the number of patients with moderate and severe symptoms. At the end of 6 months, there were only 12.4% patients presenting with severe symptoms in contrast to 25.6% in their first visit. The reductions in the symptoms were noted in the first follow up as well as in the second follow up.

Table 6: USG grading of prostate before and after treatment

USG grading	Number of patients		
	1st visit	1st Follow up (3 months)	2nd Follow up (6 months)
Grade I (20-30 grams)	74 (30.5%)	75 (31.0%)	73 (30.2%)
Grade II (31-60 grams)	105 (43.4%)	107 (44.2%)	109 (45.0%)
Grade III (61-100 grams)	43 (17.8%)	40 (16.5%)	38 (15.7%)
Grade IV (> 100 grams)	20 (8.3%)	20 (8.3%)	22 (9.1%)
Total	242 (100%)	242 (100%)	242 (100%)

There was significant improvement in the quality of life of patients presenting with BPH after taking

Tamsulosin. However, patients presenting with QOL in the terrible group in their first visit did not improve much in the subsequent visits (Table 5). USG grading of prostate size does not show much change in the size of prostate even after treatment with Tamsulosin as this drug acts on the smooth muscle and relaxes the muscle but does not decrease the size of prostate (Table 6).

There was significant improvement in the PVRU after starting Tamsulosin compared to first visit (Table 7).

Table 7: Post Void Residual Urine (PVRU) before and after treatment

PVRU (ml)	Number of patients		
	1st visit	1st Follow up (3 months)	2nd Follow up (6 months)
< 50	93 (38.5%)	121 (50%)	142 (58.7%)
51-100	86 (35.5%)	84 (34.7%)	84 (34.7%)
>100	63 (26.0%)	37 (15.3%)	16 (6.6%)
Total	242 (100%)	242 (100%)	242 (100%)

DISCUSSION

Benign prostatic hyperplasia (BPH) is a common problem we encounter in Urology OPD, almost every one in two patients. The LUTS associated with BPH start to occur after 50 years and the number of men with these symptoms increase with age. The symptoms of LUTS include urgency, frequency, nocturia, a weak and intermittent urinary stream and difficulty in initiating urination.⁷ Most of the patients come with LUTS and they want to be treated medically rather than undergo a surgical procedure. Tamsulosin is a α -1 adrenergic antagonist which helps to relax the smooth muscles present in the bladder and prostate thus improving the urinary outflow.^{4,7}

The mean age of the patients with BPH was 65.07 years (range 50- 83 years) which is similar to a study done by Gnyawali *et al* in Nepal.⁸ In another studies done by Milicevic *et al* and Wilt *et al*, the mean age of the patient were 66.3 years and 64 years respectively which correlate well with our study.^{4,6} However in another studies done by Watanabe *et al*, Lucas *et al*

and Simaioforidis *et al*, the mean age of the patients with BPH were 70.3 years, 69.4 years and 68.9 years respectively which was higher than our study.^{5,9,10} The maximum number of patients (37.2%) in our study was in the age group of 50- 59 years in contrast to a study done by Agrawal *et al* where the maximum patients (44%) lied in the age group 61-70 years.¹¹

In our study, based on IPSS, there was significant decrease in the number of patients presenting with severe symptoms (from 25.6% to 12.4%) at the end of 6 months with Tamsulosin treatment. QOL also improved significantly after taking Tamsulosin for 3 months. In a study done by Suzuki *et al*, there was decrease in IPSS and significant improvement in the QOL at 3 months after drug administration.¹² Studies have also shown that symptoms and IPSS decreases even at 8 weeks and 4 weeks treatment with Tamsulosin.^{13,14} Wilt TJ *et al* in his study also proved that Tamsulosin provided significant improvement in urinary symptoms and flow in men with BPH.⁶ In a study trial done by Tomita *et al*, even a week of Tamsulosin therapy for BPH led to a significant improvement in quality of life.¹⁵ Lucas *et al* in their

study showed that Tamsulosin in the management of patients of BPH with LUTS helped to improve the urine outflow.⁹ In our study, there is not much change in the size of the prostate even at the end of 6 months with Tamsulosin, as this drug acts on the smooth muscle and relaxes the muscle and does not decrease the size of prostate. Our finding correlates well with other studies.^{16,17,18}

Our study showed that Tamsulosin improves the PVRU. There were 26% patients having more than 100 ml of PVRU before treatment which significantly dropped to 6.6% after treatment (6 months). Similar finding was seen in studies done by Milicevic *et al* and Pawar *et al*.^{16,17,18}

Tamsulosin is effective and well tolerated with insignificant side effects in reduction of LUTS and improving the urinary outflow. Tamsulosin reduces IPSS and improves the QOL in BPH thus reducing the burden in ageing men. Patients are satisfied using the drug and are willing to continue to use it for a long time rather than undergo surgery.

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