

## **Retrospective Analysis of Patients with Lower Urinary Tract Symptoms due to Benign Prostatic Hyperplasia**

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**Objective:** To describe the personal characteristics, symptoms, pattern of referral and management of patients with benign prostate hyperplasia (BPH).

**Design:** Retrospective study.

**Setting:** Urology unit, Department of surgery, Salmaniya Medical Complex (SMC), Kingdom of Bahrain.

**Method:** Six hundred and ninety-six patients were admitted with lower urinary tract symptoms (LUTS) due to BPH during the period from January 1995 till December 2002. The data were collected using previously piloted questionnaire, enquiring about the pattern of referral, presenting symptoms, management and the outcome.

**Result:** Six hundred ninety-six patients were admitted with LUTS due to BPH. Their age ranged between 37 and 99 years. The majority of the patients 556 (79.8%) were above the age of 60 years.

Abdominal ultrasound was performed in 619 patients (88.9%), digital rectal examination (DRE) was done in 508 patients (72.9%) and prostate specific antigen (PSA) was requested for 383 patients (55%).

Eighty-four patients (12%) received pre-referral pharmacological treatment in the form of  $\alpha$  blockers. The majority of these were referred from private clinics.

Five hundred and five patients (72.55%) had transurethral resection of prostate (TURP). Cystoscopy was done for 21 patients (3%).

The histological examination in those who underwent surgery (505 patients) showed, 46.26% (234/505) had pure BPH, 38.8% (196/505) had BPH with other histological findings such as non-specific prostatitis, or associated cystitis and urethritis; and 14.85% (75/505) had prostate cancer.

**Conclusion:** Health centers have a major role in educating, early diagnosis and proper medical management and timely referral of cases with BPH to the tertiary care centre.

BPH being the disease of aging population and due to the increase in the mean age of the general population, the number of patients with LUTS is likely to increase and must be considered when resources are planned for medical care.

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BPH is becoming a major contributor to reduced quality of life and the consequent psychological problems of many aging men around the world, especially with the increase in life expectancy, which approaches 80 years in most of the developed and some of the developing countries<sup>1</sup>.

The prevalence of histological BPH in autopsy studies rises from approximately 20% in men aged 41- 50 years, to 50% in men aged 51- 60 years and to over 90% in men older than 80 years<sup>2</sup>.

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Although clinical evidence of the disease occurs less commonly, the symptoms of obstruction is age related. At age of 55 years, approximately 25% of men report obstructive voiding symptoms. At the age of 75 years, 50% of men complain of decrease in the force and caliber of urinary stream<sup>3</sup>. An important consideration is required when interpreting the prevalence or incidence figures for BPH derived from autopsy findings or clinical series; not all cases of BPH are symptomatic and not everyone with LUTS has BPH<sup>2</sup>.

Major studies were performed in the last decades, which improved our knowledge of the epidemiology and natural history of BPH and LUTS. There are still number of important issues, which remain unknown or poorly understood<sup>2,3</sup>.

There is an overwhelming need for working epidemiological definition of BPH and LUTS at present time. Lack of this definition is a major factor in holding back progress in the studies of symptoms, prevalence and etiology.

In view of the above, an analytic study was needed to assess the size of the problem and describe its basic characteristics in the Kingdom of Bahrain, hence this study was conducted.

The aim of this study is to describe the personal characteristic, symptoms, pattern of referral and management of patients with BPH.

## **METHOD**

Six hundred and ninety-six patients admitted with BPH for either therapeutic or investigational reasons to the urology unit during the period from January 1995 till December 2002, were included in the study and the data were collected from their medical records which included the following:

- Patients' personal characteristics.
- Patients' symptoms and investigations.
- Pattern of referral to the urology clinic/unit.
- Therapeutic interventions before and after referral.
- Patients' response to therapeutic intervention.

## **RESULT**

During the eight years period, 696 patients were included in the study. The age range was 37 to 99 years with a median age of 69 years. Five hundred and fifty-six patients (79.8%) were above the age of 60 years, and only two patients were below the age of 40 years. Five hundred and forty-nine patients (78.8%) were Bahrainis.

Two hundred and forty-four patients (35.05%) were referred from the accident and emergency department, 209 patients (30.02%) from private clinics, 139 patients (19.99%) from the health centers and 104 patients (14.94%) were referred from other medical specialties within the hospital.

Weak stream of urine and frequency of micturition were the most prevalent symptoms accounting for 67.95% (473 patients) and 61.92% (431 patients) respectively.

Two hundred and ninety-nine patients (42.95%) complained from dysuria and retention of urine. Two hundred sixty-four patients (37.93%) presented with hesitancy and two hundred and eight patients (29.88%) presented with dribbling. Only minority of patients presented with haematuria (13%), overflow (10%) and nocturia in (7%) (See Table 1).

**Table 1: Pattern of presenting symptoms and its mean duration.**

Presenting Symptoms	No of pts	Percentage	Mean Duration (Days)
Weak Stream	473	68%	180
Frequency	431	62%	180
Urgency	383	55%	150
Dysuria	299	43%	90
Retention	299	43%	1
Hesitancy	264	38%	180
Dribbling	208	30%	150
Hematuria	90	13%	30
Overflow	69	10%	60
Nocturia	49	7%	120

**Table 2: Investigations for LUTS/BPH**

Pre-referral Investigations	No of Pts	% age
Abdominal ultrasound	619	89%
DRE	508	73%
PSA	383	55%
Uroflowmetry	55	8%
IVU	35	5%
Trans-rectal ultrasound	14	2%

**Table 3: The outcome of patients with lower urinary tract symptoms due to BPH with or without surgical interventions (TURP)**

Out come of patients with LUTS/BPH	No of pts	% age	age range (mean)
Overall Outcome			
Excellent	160	23%	37 - 98 (66)
Good	431	62%	39 - 99 (70)
Fair	77	11%	50 - 99 (71)
Poor	28	4%	58 - 88 (75)
Outcome after TURP (505 patients)			
Excellent	127	25%	48 - 88 (68)
Good	45	9%	46 - 99 (71)
Fair	318	63%	53 - 99 (71.5)
Poor	15	3%	58 - 88 (76.5)
Outcome who did not have TURP (191 patients)			
Excellent	39	20%	37 - 98 (59.5)
Good	104	54%	39 - 89 (65)
Fair	41	21%	50 - 96 (70)
Poor	7	3.6%	58 - 79 (72.5)

Fifty percent of patients had mainly obstructive symptoms (348 patients), 43% (300 patients) had mainly irritative symptoms and only 6.89% (48 patients) had mixture of both.

Six hundred and nineteen patients (88.9%) had abdominal ultrasound, 72.9% (508 patients) had DRE and PSA was done for 55% (383 patients). Only 2% of patients (14 patients) had trans-rectal

ultrasound (TRUS). Flowmetry and intravenous urography (IVU) was done for 8% and 5% (56 patients and 35 patients) respectively (see Table 2).

Eighty-four patients (12%) received pre-referral treatment with  $\alpha$  blockers. The majority of these were referred from private clinics; only 6 (0.86%) patients with  $\alpha$  blocker were referred from the health centers.

Five hundred and five (72.55%) underwent transurethral resection of prostate (TURP), 21 patients (3%) required cystoscopy and urethral dilatation, 14 patients (2%) required cystolithotripsy or litholapaxy, 11 patients (1.58%) required bladder tumor resection and TURP, and in 13 patients (1.86%) who were either bedridden or unfit for anesthesia had prostacath inserted. One patient (0.14%) had open prostatectomy.

The histological examination of those who had undergone surgery (505 patients) showed, 46.26% (234/505) had pure BPH, 38.8% (196/505) had BPH with other histological findings such as non-specific prostatitis, or associated cystitis and urethritis; and 14.85% (75/505) had prostate cancer.

Five hundred and ninety-one (84.91%) patients were symptom free during follow up visits, 11% (77 patients) has markedly improved and 4% (28 patient) showed no improvement, while post TURP 34% of the patients were symptom free, 63% showed marked improvement and only 3% continued to complain from their symptoms (see Table 3).

## **DISCUSSION**

BPH is the most common condition associated with ageing in men. It was noticed that the incidence rate of LUTS/BPH increases linearly with age and reaches its maximum at the age of 79 years. After the age of 80 years, the incidence remains constant.

The symptoms of BPH can be divided into obstructive, irritative and mixed. Obstructive symptoms include hesitancy, decrease force and caliber of urinary stream, post void dribbling, sensation of incomplete evacuation and retention while the irritative symptoms include urgency, frequency and nocturia.

In this study, mixed symptoms were present in 6.89% of cases, which is considered low but this could be due to insufficient documentation in the medical records.

The severity of symptoms (LUTS) could not be assessed accurately due to lack of scoring system. The self administered questionnaire developed by the American Urological Association (AUA) is both valid and reliable in identifying the need to treat patients and monitor their response to therapy<sup>4</sup>.

The AUA symptoms score questionnaire is perhaps the single most reliable important tool for all patients with BPH and is recommended for all patients before initiation of therapy, but unfortunately it is never used by the health centers, and is rarely used in the urology unit.

This study showed that only 20% of our patients were referred from the health centers, while the majority were referred from either accident and emergency department with urinary retention or referred from private urology clinics for active interventions.

The health centers are considered the gate keeper for initial diagnosis, management and proper timely referral to tertiary care for further active interventions. However, it was noticed that only six patients (0.86%) were medically treated prior to referral to SMC urology unit.

Non-invasive assessment of prostatic obstruction in elderly men with LUTS associated with BPH is essential prior to the initiation of any treatment, this includes but is not limited to: good and elaborate history, physical examination including DRE, urine analysis and PSA<sup>5, 6, 7</sup>.

Abdominal ultrasonography for kidney, bladder, prostate and uroflowmetry are the second line of investigations<sup>8,9,10</sup>.

Trans-rectal ultrasound with or without prostate biopsy, urodynamics studies and IVU are the third line of investigations <sup>11,12,13,14</sup>.

The referral patterns noted is unusual as 35.05% of the patients were referred from accident and emergency and 19.99% from health centers which clearly indicate the lack of health centre role in the initial management of LUTS due to BPH.

Eighty-eight percent of the patients (612 patients) received some type of surgical intervention as TURP, open prostatectomy, cystoscopy and prostacath insertion, while 12% of the patients received  $\alpha$  blockers and less commonly anti-androgen and finasteride. However, the overall outcome of the treatment of patients with LUTS due to BPH has been good in both groups (84.9%).

## CONCLUSION

**Health centers have to play a better role in educating, early diagnosis and proper medical management and timely referral of cases with BPH to the tertiary care center.**

**More effort should be made to improve the hospital record keeping system.**

**BPH being the disease of aging population and with the increase in the mean age of the general population, the number of individuals with LUTS is likely to increase and must be considered when resources are planned for medical care.**

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