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Prevalence of Benign Prostatic Hyperplasia in Hospital Pakar Sultanah Fatimah Muar

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Abstract: Benign prostatic hyperplasia (BPH) is a non-malignant enlargement of the prostate. It is a normal consequence of aging but it may produce distressing symptoms. As medical knowledge advances, there will be increased in life expectancy and the number of men with BPH is expected to rise as well. Treating these men will take up the majority of our department's budget. However, due to constricting budget and restricting quota, we are unable to supply all of our patients with the necessary medications. This study was done to determine the number of BPH patients treated per month in our centre and to postulate the number of BPH patients treated per year. The findings would help us in planning our department's budget and if necessary the data could be used to justify request for an increment in the budget from the higher authority. This prospective and observational study was done in Hospital Pakar Sultanah Fatimah Muar, a district and teaching hospital in the state of Johor, Malaysia. From 15 July until 15 September 2017, data on all patients above 50 years old that were seen in our surgical outpatient surgical clinic with newly diagnosed benign prostatic hyperplasia were collected. Data analysis was done using IBM® SPSS® Statistics Version 22. Permission to carry out this study was obtained from the National Medical Research Register Malaysia (NMRR ID: 17-1436-36473 (IIR)). From 15 July until 15 September 2017, there were 24 newly diagnosed BPH patients in our centre. The majority of our patients were started on medications for symptomatic relieve of their BPH. Only 8.3% were put on watchful waiting. Fifty percent were started on single therapy (alpha blocker) and 41.7% were started on dual therapy (alpha-blocker and 5-alpha reductase inhibitor). Between the different racial groups in our population, there is no statistical difference in terms of age (p=0.678), IPSS (p=0.673) and PSA level (p=0.397). From this current study we postulated that we would receive 144 new patients with BPH per year. Benign prostatic hyperplasia is one of the most common diseases among elderly men that can affect their quality of life. Most men need medications to treat their symptoms. Data from our study showed that we have an important healthcare issue that warrants the attention of the policy maker. We hope that this can convince them to allocate more money to buy medications to treat BPH.
Keywords: benign prostatic hyperplasia, prevalence, lowers urinary tract symptoms, International Prostate Symptom Score, prostatic specific antigen.

INTRODUCTION

Benign prostatic hyperplasia (BPH) is a non-malignant enlargement of the prostate. This enlargement is a normal consequence of aging but it may produce distressing symptoms. It is estimated that by the age of 60 years old, 50% of men will have BPH (Ministry of Health Malaysia, 2002). BPH is diagnosed clinically and the associated symptoms are collectively known as lower urinary tract symptoms (LUTS). LUTS may be divided into voiding (obstructive) and storage (irritative) symptoms. Voiding symptoms include hesistancy, intermittency and slow stream. Storage symptoms include frequency, urgency, nocturia and dribbling. The severity of the symptoms can be further divided into mild, moderate and severe according to the International Prostate Symptom Score (IPSS) created in 1992 by the American Urological Association [1]. Quek *et al.* validated the IPSS questionnaire in Malaysia in 2001[2]. Radiologically, the prostate is considered enlarged if the volume is greater than 20 $cm^{3.}$

Hospital Pakar Sultanah Fatimah (HPSF) is a district hospital located in the state of Johor, Malaysia. It was established around the year 1900 and was moved to its current location in 1918. It is the third most important hospital in Johor and it serves as a reference centre for Segamat, Tangkak and Batu Pahat districts. In addition it is also a teaching hospital for two local universities. There are 550 gazette beds in the hospital.

Muar, also known as, Bandar Maharani, is a town and the capital of Muar District in Johor, Malaysia. It was declared the Royal City of Johor by the current Sultan of Johor, Sultan Ibrahim Sultan Iskandar in 2012. It has the population of 245,957 (Department of Statistics Malaysia, 2010). Among the locals, it is also known as "Bandar Pencen" or the town of pensioners because this is the town where people like to settle down for their retirement. As with the rest of Malaysia, the population is Muar is made up of multi ethnic group mainly Malay, Chinese and Indian. It is expected that there will be a large number of patients with BPH being referred to our outpatient clinic and treating these patients will take up the majority of our department's budget. However, due to constricting budget and restricting quota, we are unable to supply all of our patients with the necessary medications.

Treatment for BPH is categorized into watchful waiting, single therapy with an alpha-blocker, dual therapy (combination of alpha-blocker with a 5-alpha reductase inhibitor) or surgical intervention. Common alpha-blockers used in our centre are terazosin, doxazosin and tamsulosin. Common 5-alpha reductase inhibitors used in our centre are finasteride and dutasteride. A check in the PHIS system (Pharmacy Information System, Ministry of Health, Malaysia) on 7 June 2017 revealed that currently there are 864 patients who are currently on Doxazosin, 615 on tamsulosin, 210 of dutasteride and 530 on finasteride in HPSF Muar.

This study was done to determine the number of BPH patients treated per month in our centre and to postulate the number of BPH patients treated per year. This could help us in planning our department's budget and if necessary the data could be used to justify request for an increment in the budget from the higher authority.

Objective

- To study the prevalence of symptomatic BPH in HPSF Muar
- To identify differences in prevalence and characteristics between different ethnic groups

MATERIALS AND METHODS

This prospective and observational study was done in a district, teaching hospital in the state of Johor. From 15 July until 15 September 2017, data on all patients above 50 years old that were seen in our surgical outpatient surgical clinic with newly diagnosed benign prostatic hyperplasia were collected. Diagnosis was established based on the lower urinary tract symptoms and international prostatic severity scoring marks. Patients with recurrent disease or with diagnosis of prostate cancers were excluded. All patients had ultrasound of the prostate and baseline prostatic specific agent level was taken. Data analysis was done using IBM® SPSS® Statistics Version 22. Descriptive statistics were given as frequencies, median, mean, minimum and maximum for continuous variables and as percentages for categorical variables. Pearson's chi-square was used to evaluate the observed differences between the multiple races.

Ethics

Permission to carry out this study was obtained from the National Medical Research Register Malaysia (NMRR ID: 17-1436-36473 (IIR)).

RESULTS

Demographic data

From 15 July until 15 September 2017, there were 24 newly diagnosed BPH patients in our centre. Table 1 shows the demographic data of our study population. Our patients were mostly Malay and Chinese. The majority was married. The mean age was 63.7 years (range 45-82). The mean age for Malay, Chinese and India were 61.4, 64.5 and 72.5 years respectively. There was no correlation between race and age in our study population (Table 3, p=0.678). Table 2 shows IPSS, PSA and treatment for BPH according to various age groups.

Table-1: Socio-demographic characteristics of the study population

Variables		n	%
Total		24	100
Age (years)	<60	10	41.6
	60-70	9	37.5
	>70	5	20.8
Race	Malay	11	45.8
	Chinese	11	45.8
	Indian	2	8.3
	Others	0	0
Marital Status	Single	0	0
	Married	22	91.6
	Divorced	1	4.1
	Widow	1	4.1

Table-2: IPSS, PSA and treatment for BPH according to various age groups

	All ages		Age group (years)					
			<60		60-70		>70	
	n	%	n	%	n	%	n	%
Total	24	100	10	41.6	8	33.3	6	25
DRE detected BPH	23	95.8	9	3.75	8	33.3	6	25
IPSS								
0 (no symptoms)	0	0	0	0	0	0	0	0
1-7 (mild symptoms)	7	29.1	2	8.3	3	12.5	2	8.3
8-19 (moderate symptoms)	12	50	5	20.8	3	12.5	4	16.6
20-35 (severe symptoms)	5	20.8	1	4.1	2	8.3	2	8.3
PSA								
0 - 1.49 (ng/L)	13	54.1	5	20.8	4	16.6	4	16.6
1.50 - 9.99 (ng/L)	7	29.1	3	12.5	2	8.3	2	8.3
10.0 - 20.0 (ng/L)	4	16.6	2	8.3	1	4.1	1	4.1
Treatment								
Watchful waiting	2	8.3	2	8.3	0	0	0	0
Single therapy (alpha blocker)	12	50	4	16.7	4	16.7	4	16.7
Dual therapy (alpha blocker & 5ARI)	10	41.7	4	16.7	4	16.7	2	8.3
Surgical Intervention	0	0	0	0	0	0	0	0

Symptom score, quality of life score and PSA level

Seventeen patients (70.8%) had moderate to severe symptoms according to IPSS. Between the different racial groups in our population, there is no statistical difference in terms of IPSS (p=0.673) and PSA level (p=0.397).

Table-3: Distribution of age (p=0.678), IPSS (p=0.673) and PSA (p=0.397) according to race

	Age (years)			IPSS			PSA (ng/ml)		
	<60	60-70	>70	<8	8-19	20-35	0-1.49	1.50-9.99	10-20
Malay (%, n)	25% (6)	12.5% (3)	8.3% (2)	12.5% (3)	29.2% (7)	4.2% (1)	20.8% (5)	20.8% (5)	4.2% (1)
Chinese (%, n)	16.7% (4)	20.8% (5)	8.3% (2)	12.5% (3)	29.2% (7)	4.2% (1)	25% (6)	16.7% (4)	4.2% (1)
Indian (%, n)	0% (0)	4.2% (1)	4.2% (1)	4.2 (1)	0% (0)	4.2% (1)	8.3% (2)	0% (0)	0% (0)

Treatment

The majority of our patients were started on medications for symptomatic relieve of their BPH (n=22, 91.7%). Only 8.3% were put on watchful waiting. Fifty percent were started on single therapy (alpha-blocker) and 41.7% were started on dual therapy (alpha blocker and 5 alpha reductase inhibitor). None went for surgical therapy.

DISCUSSIONS

Benign prostatic hyperplasia is a common medical condition affecting the aging males. It can cause distressing symptoms and if left untreated it can cause serious complications for example acute urinary retention, acute kidney failure, urinary tract infection and bladder stone. The treatment for BPH can cause considerable financial burden on the family, society and health authority. Saigal in the USA estimated the direct and indirect cost of BPH to the private sector to be 3.9 billion dollars [3]. In the UK it is estimated to be about £69 million for drug treatment alone [4]. If we consider the cost to treat complications of BPH, then the financial burden will be even more. Unfortunately there are no data from Malaysia for us to compare the treatment costs. From our study, the majority of our patients were started on medications for symptomatic relieve of their BPH. Only 8.3% were put on watchful waiting. Fifty percent were started on single therapy (alpha-blocker) and 41.7% were started on dual therapy (alpha blocker and 5 alpha reductase inhibitor). This reflected the importance of BPH medications for these patients.

In our current study we did not find any significance difference in terms of race against age, IPSS score or PSA level. However, Teh *et al*. in 2001 did find significant differences in median symptoms score along the three races with the Malay having the highest median symptoms score of 13, followed by Chinese 9 and Indian 8 [5]. The reason for this could be because our sample size is considerably small compared to them.

Benign prostatic hyperplasia is common disease among the elderly and from this current study we postulated that we would receive 144 new patients

with BPH per year. Most of these patients will be on treatment. Only slightly more than eight percent of our patients were on watchful waiting treatment. This is similar to the Italian study population done in 1999 (10%) [6]. Our practice of prescribing treatment for most of BPH patients is not unique as a survey of six European countries in 2000-2002 found that most of their newly diagnosed men with BPH were prescribed medications (74%) [7].

Based on our PHIS system (Pharmacy Information System, Ministry of Health, Malaysia) there are currently 1479 patients who are already on single treatment for BPH in our centre (864 patients on doxazosin and 615 patients on tamsulosin). So in total we will have more than 1600 patients who need treatment for BPH in the year 2018. As recent data from The Medical Therapy of Prostate Symptoms (MTOPS) [8] and Combination therapy of Avodart (dutasteride) and Tamsulosin (CombAT) [9] studies have shown that there are advantages of long-term combined treatment, it means that more patients will be put on these treatment. In clinical practice, this translates that the cost of treating these patients will increase and more budget will be needed. This data showed that we have an important healthcare issue that warrants the attention of the policy maker. We hope that this can convince them to allocate more money to buy medications to treat BPH.

CONCLUSIONS

Benign prostatic hyperplasia is one of the most common diseases among elderly men that can affect their quality of life. Most men need medications to treat their symptoms.

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