

A HOSPITAL BASED STUDY: EPIDEMIOLOGY AND PRESENTATION OF BENIGN PROSTATIC HYPERPLASIA

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Abstract

Introduction: Benign prostatic hyperplasia, is one of the most prevalent disorders that affects male population in every part of the world. The incidence of BPH has increased over the past ten years due to an increase in modifiable risk factors, such as obesity and metabolic disease whereas aging is found to be the most common non modifiable risk factor for BPH.

Objective: The main objective of this study is to find the epidemiology and presentation of BPH cases with their treatment modality at hospital in Jalalabad.

Method and methodology: Its a retrospective study of 75 patients who were diagnosed with BPH and came for different types of intervention and treatment in City Hospital in the year 2022 at Jalalabad, Kyrgystan.

Results: The age distribution in this study shows the maximum respondents age group of 60-75 years with 66.6%. According to our study 61.33% of the respondents are having a BMI value more than 25. More than 70% respondents were following up case of BPH who were under medication. Most of respondents had multiple disease whereas most common associate disease are hypertension (22.6%) and diabetes mellitus (13.3%). On symptoms analysis, Frequency of micturation was most common presentation found (86.66 %). Among the respondent, 41.33% were suffering from moderate symptoms and 38.66% were suffering from severe symptoms. 56.66% of the respondents have prostate size between 40-90cc and most common complication associate was acute retention of urine (9.33%). Most of respondent (49.4%) were currently on medical management and 34.6% of respondents underwent surgical management. patient who patient who underwent surgery, 80.76 % underwent TURP followed by open prostatectomy.

Conclusion: The study shows that the increasing age is the risk factor for the prevalence of BPH. In the future, this condition will undoubtedly become even more common and a significant burden for all health care systems due to a shifting demographic profile and an aging population in practically every society. Exercise and nutrition recommendations are crucial strategies in addition to medication and surgery, as they empower patients to take charge of their own health.

Keywords: Benign Prostatic Hyperplasia (BPH), Epidemiology, Hospital

ИССЛЕДОВАНИЕ, ПРОВЕДЕННОЕ В УСЛОВИЯХ СТАЦИОНАРА: ЭПИДЕМОЛОГИЯ И ПРОЯВЛЕНИЯ ДОБРОКАЧЕСТВЕННОЙ ГИПЕРПЛАЗИИ ПРЕДСТАТЕЛЬНОЙ ЖЕЛЕЗЫ

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Аннотация

Введение: Доброкачественная гиперплазия предстательной железы (ДГПЖ) — одно из самых распространенных заболеваний, поражающих мужское население во всем мире. Заболеваемость ДГПЖ увеличилась за последние десять лет в связи с ростом модифицируемых факторов риска, таких как ожирение и метаболические заболевания, в то время как старение является наиболее распространенным немодифицируемым фактором риска ДГПЖ.

Цель: Основная цель данного исследования — изучить эпидемиологию и клиническую картину случаев доброкачественной гиперплазии предстательной железы (ДГПЖ) с учетом методов их лечения в больнице г. Джалал-Абад.

Методология: Проведено ретроспективное исследование 75 пациентов с диагнозом ДГПЖ, обратившихся в городскую больницу в 2022 году в г. Джалал-Абад, Кыргызстан, для проведения различных видов вмешательства и лечения.

Результаты: Возрастное распределение в данном исследовании показывает максимальную возрастную группу респондентов 60–75 лет — 66,6%. Согласно нашему исследованию, 61,33% респондентов имели ИМТ более 25. Более 70% респондентов находились под наблюдением в связи с ДГПЖ и принимали лекарственные препараты. У большинства респондентов имелось несколько заболеваний, наиболее распространенными из которых являются гипертония (22,6%) и сахарный диабет (13,3%). При анализе симптомов наиболее распространенным проявлением было учащенное мочеиспускание (86,66%). У 41,33% респондентов наблюдались умеренные симптомы, а у 38,66% — тяжелые. У 56,66% респондентов размер предстательной железы составлял 40–90 см³, а наиболее частым сопутствующим осложнением была острая задержка мочи (9,33%). Большинство респондентов (49,4%) в настоящее время находились на фармакотерапии, а 34,6% респондентов прошли хирургическое лечение. 80,76% пациентов, перенесших операцию, перенесли ТУРП, а затем открытую простатэктомию.

Заключение: Исследование показывает, что возраст является фактором риска развития ДГПЖ. В будущем это заболевание, несомненно, станет еще более распространенным и станет значительным бременем для всех систем здравоохранения в связи с изменением демографического профиля и старением населения практически в каждом обществе. Рекомендации по физическим упражнениям и питанию являются важнейшими стратегиями, помимо медикаментозной терапии и хирургического вмешательства, поскольку они позволяют пациентам самостоятельно заботиться о своем здоровье.

Ключевые слова: Доброкачественная гиперплазия предстательной железы (ДГПЖ), Эпидемиология, Больница

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Introduction

Benign prostatic hyperplasia (BPH) is a nonmalignant growth or hyperplasia of the prostate tissue and is a very common cause of lower urinary tract symptoms (LUTS) in old-aged men. Disease prevalence is seen to be increasing with advancing age. Risk factors for the development of BPH include family history, diabetes, diet, genetic factors, obesity and metabolic syndrome. [1]

The symptoms of BPH include urinary frequency, urgency, lower urinary tract symptoms, incomplete bladder emptying, urinary retention, weak urinary stream, post-void dribbling and UTIs. Clinical examination includes Digital Rectal Exam (DRE) which allows for assessment of the size and condition of the prostate gland.[2] Tests commonly performed for patients with benign prostatic hyperplasia (BPH) include, Prostate-Specific Antigen (PSA) Test which measures the level of PSA, a protein produced by the prostate gland. Urinalysis for signs of infection. Uroflowmetry which is a non-invasive test measures the rate and amount of urine voided to assess urinary flow and potential obstruction, Ultrasound abdomen uses ultrasound waves for the imaging the prostate and surrounding tissues for the evaluation of size and structure of the gland.[3]

Medications commonly prescribed include alpha blockers such as tamsulosin, terazosin, and doxazosin, which relaxes the prostate and bladder neck muscles to improve urine flow. Additionally, 5 alpha reductase inhibitors are added for large (>40 gram) symptomatic prostate, which reduces the size of prostate. Patients with surgical indication commonly undergoes transurethral resection of prostate. [4]

In 2019, the global incidence of benign prostatic hyperplasia was 94 million cases compared to 51.1 million in 2000. The age-standardized prevalence of benign prostatic hyperplasia was 2480 per 100,000 people. Although the global number of prevalent cases increased by 70.5% between 2000 and 2019, the global age-standardized prevalence remained stable.[5] In Eastern Europe, age-standardized prevalence was between 6480 and 987 per 100,000 in 2019, followed by North Africa and the Middle East.[6]

In a comprehensive survey for 2021-2022 with 3265 men of various ages in Kyrgyz Republic, showed the early incidence and prevalence of prostate diseases in Chui region (12%), Issyk-Kul region (36%), Talas region (32%), Osh region (13%) and Jalal- Abad regions (9%). Among the men who applied, 37.8% were urban residents and 62.2% were rural residents. In the survey, 28.4% of the men (in the group of middle and old age) were suffering from Benign prostate hyperplasia. [7]

Methods and methodology

This was a retrospective, descriptive study which was done for a year period of time in the year 2022 in the Urology department of City hospital in Jalalabad. After ethical clearance from committee board and hospital authorities, we have used standard questionnaire to collect the data for final conclusion. There were total 75 patients who were undertaken for this study. The data that are summarized in this study were collected from different sources like folders of investigations, patient's registers, hospital and surgical records from the hospital.

Results

• Table 1. Distribution of respondents according to their respective age

Responses	Frequency	Percentage
40-59	19	25.33
60-75	50	66.6
75 and above	6	8
Total		

Above Table shows that the distribution of respondents according to their age which shows the maximum age group belongs to 60-75 years with 66.6% and followed by age group 40-59 (25.33%) .

• *Table 2. Distribution of respondents according to their BMI*

Responses	Frequency	Percentage
24.9 or below	29	38.66
25.0 or above	46	61.33
Total	75	100

The distribution of respondents according to their Body Mass Index (BMI) which shows majority 61.33% of the respondents are having a BMI value 25.0 and above and remaining 38.66% of respondents were having the BMI value of 24.9 and below.

• *Table 3. Distribution of respondents according to their history and the time it was diagnosed*

Respondents	Frequency	Percentage
More than 1 years ago	36	48
Less than a year ago	17	22.66
New cases	22	29.33
Total	75	100.0

According to the previous history of diagnosis, above table shows 48% respondents were diagnosed for more than 1 year ago 29.33% respondents were newly diagnosed and remaining 22.6% respondents were diagnosed less than 1 year ago only.

• *Table 4. Distribution of respondents according to other health conditions they experience*

Responses	Frequency	Percentage
Diabetes Mellitus	10	13.33
Hypertension	17	22.66
Heart Diseases	8	10.66
Pulmonary Diseases	6	8
Multiple Diseases	28	37.33
No Diseases	6	8
Total	75	100

Above Table shows majority 37.33% of respondents had multiple disease where as 22.6% respondents had hypertension, 13.3% had diabetes mellitus and 10.6% had some heart diseases and remaining 8% had pulmonary diseases and remaining 8% had no any diseases along with their current problem.

• Table 5. Distribution of respondents according to the presenting urinary symptoms associated with BPH

Responses	Frequency	Percentage
Frequency of micturition during daytime		
No	10	13.33
yes	65	86.66
Frequency of micturition during night time (Nocturia)		
None	13	17.33
Once	24	32
2 or more	38	50.66
Urgency to Urinate		
No	14	18.66
yes	61	81.33
Intermettency		
No	17	22.66
yes	58	77.33
Weak urine stream		
No	12	16
yes	63	84
Sense of incomplete voiding of the bladder		
No	16	21.33
yes	59	78.66
Strain during urination		
No	14	18.66
Yes	61	81.33
Other symptoms		
Acute urinary retention	11	14.66
Hematuria	3	4
Severity of urinary symptoms (IPSS score)		
0-7 Mild	15	20
8-19 Moderate	31	41.33
20-35 Severe	29	38.66

The above table on symptoms assessment shows frequency of micturition was most common presentation found in 86.66 % of the respondents, followed by weak urinary stream (84%) and Nocturia (82.66%). Among the respondent, 38.66% were suffering from severe symptoms and 14.66% presented with acute retention of urine.

• Table 6. Distribution of respondents according to the findings of relevant diagnostic test--done

Responses	Frequency	Percentage
Size of Prostate (USG abdomen)		
Below 5*3*5 (40 cc)	29	38.66
Between 5*3*5-6*4*6 (40-90 cc)	41	54.67
Above 6*4*6 (>90 cc)	5	6.67
Other Findings (USG & Lab)		
Bladder Calculi	2	2.66
Hydronephrosis	3	4
UTI	7	9.33

Above Table on Laboratory and Diagnostic Tests shows that 54.67% of the respondents have prostate size between 40-90cc and 6.67% have huge prostate. 14.66 % respondent developed UTI while 4% have hydronephrosis and 2.66 % have associate bladder calculi.

• Table7. Distribution of respondents according to current treatment status for BPH

Responses	Frequency	Percentage
Obervation and follow up	12	16
Medical management	37	49.4
Surgical management	26	34.6
Total	75	100

Above Table shows 49.4% of respondents are currently on medical management as a treatment for BPH and 34.6% of respondents went through surgical management and remaining 16% respondents were under observationa and follow up for their condition.

• Table 8. Distribution of respondents according to the surgery performed for BPH

Response	Frequency	Percentage
TURP	21	80.76
Open surgery	5	19.23
Total	26	34.7
Additional intervention		
Urethral catheterization	5	6.7
Suprapubic cystostomy	2	2.7
Total	7	

Above Table shows, out of 26 patient who underwent surgery, 80.76 % underwent TURP, while for rst of cases, open prostatectomy was done. Out of 9 cases of acute retention of urine; 5 patients were managed by urethral catheterization and 2 were managed by suprapubic cystostomy. After catheterization, 4 patients underwent surgical management and 3 were discharged with medical management and follow up plan.

Discussion

Benign prostatic hyperplasia (BPH) refers to the non-malignant growth or hyperplasia of prostate tissue and is common cause of lower urinary tract symptoms (LUTS) in older men. This study aims to investigate the epidemiology and presentation of Benign Prostate Hyperplasia (BPH) cases at the hospitals in Jalalabad, Kyrgyzstan. Disease prevalence has been shown to increase with advancing age. In our survey, more than 70% cases were diagnosed case of BPH under management where as in the survey conducted by Lim K.B, in his study it shows that on prostate disease awareness, 55.2% of respondents claimed they were unaware of the condition, 11.3% of respondents were unable to assess their own health, 52.2% of respondents said they did not trust doctors, however, 41% of respondents reported that the disease was detected for the first time. [8]

Most of the respondents belongs to age group 60-75 i.e., 66.6% and the respondents who were aged between 40-59 years of age were 25.33%. A systematic analysis for the Global Burden of BPH showed men aged 65–74 years shared the greatest absolute burden of benign prostatic hyperplasia, accounting for 42% of the total prevalent cases. Our findings are consistent with global standard (9). A study done in mainland China, shows the prevalence of BPH was with increasing age after the age of 40 years. (10)

According to our data majority men with BPH i.e 61.33%, have BMI 25 or above and rest of patient have BMI less than 25. The growth of the prostate gland corresponds with body mass index (BMI) and waist circumference. According to the WHO classification BMI greater than 35kg/m² have a 3.5 times higher risk of developing BPH (10). Study conducted by Betai K et al showed significant correlation of BMI with prostate volume. Patients with larger prostates (>75cc) had significantly higher BMI compared to patients with smaller prostate volume (<75cc) (11)

Fowke and colleagues showed that prostate volume was significantly positively associated with BMI, waist-hip ratio, waist circumference, percent body fat, total fat mass, and total lean mass [12]. Kim et al. demonstrated positive correlations between BMI and prostate volume and between BMI and International Prostate Symptom Score among Korean men [13].

In our study, majority 37.33% of respondents had multiple disease where as 22.6% respondents had hypertension, 13.3% had diabetes mellitus and 10.6% had some heart diseases and remaining 8% had pulmonary diseases. There have been multiple studies interested in demonstrating the link between metabolic syndrome and BPH, but findings have been inconsistent. Some studies have reported how diabetes and hyperlipidemia [14,15] were correlated with BPH, while other studies have failed to demonstrate an association [16]. On comparison with the study on Effect of Obesity and Hyperglycemia on BPH in Elderly Patients with Newly Diagnosed Type 2 Diabetes, the respondents with diabetes mellitus type1 were more prone to have BPH (17). Ageing population has higher incidence of cardiovascular disease and diabetes. BPH occurs at a high frequency in the aging man and is usually present with 1 or more comorbidities. Accordingly, the choice of BPH treatment should be guided by the presence of medical conditions such as diabetes, metabolic syndrome, CV disease and hypertension (18)

Symptoms assessment of BPH patient in our study shows, frequency of micturation was most common presentation found in 86.66 % of the respondents, followed by weak urinary stream (84%) and Nocturia (82.66%). Among the respondent, 41.33% were suffering from moderate symptoms & 38.66% were suffering from severe symptoms and 9.33% presented with acute retention of urine. Although BPH is not a life-threatening condition, the impact of BPH on

quality of life can be significant and should not be underestimated. Moderate-to-severe LUTS was seen in 41 % of the patients on community-based done in the United Kingdom (18,19) and Literature review showed frequency was the most common symptoms followed by weak urinary stream and dribbling of urine (20), these findings were consistent with our study.

Study shows that 56.66% of the respondents have prostate size between 40-90cc and 6.66% have huge prostate. In this study it shows that 14.66 % respondent developed acute retention of urine and 9.33% UTI, while 4% have hydronephrosis and 2.66 % have associate bladder calculi. The commonest range of prostate volume was 50–89 cc as shown in study done by obiesie et al. Review article by speakman MJ showed, the most common presenting complication of BPH that requires hospitalization is acute urinary retention, which greatly affects patients' quality of life and is an important health issue. Many of the other complications of BPH are in part due to complications of chronic urinary retention; these include recurrent urinary tract infections formation of bladder calculi, hematuria, and damage to bladder wall and kidneys. Finally, there is an important association between BPH/BOO and male erectile dysfunction. (21)

Our study showed, 49.4% of respondents are currently on medical management as a treatment for BPH and 34.6% of respondents went through surgical management and remaining 16% respondents were under observational and follow up for their condition. Out of 26 patient who underwent surgery, 80.76 % under went TURP, while for rest of cases, open prostatectomy was done. Out of 9 cases of acute retention of urine; 5 patients were managed by urethral catheterization and 2 were managed by suprapubic cystostomy. After catheterization, four patient underwent surgical management and 3 were discharged with medical management and follow up plan.

After lifestyle modifications, medication is generally first line in the treatment of symptomatic BPH. Two drug classes became accepted standard care are 5-alpha-reductase inhibitors and Alpha-blockers. Although monotherapy, with alpha blockers and 5 alpha reductase inhibitors, is beneficial, the combination of these drugs is highly effective (22). Surgical intervention are reserved to patient with complications and refractory to medical therapy. TURP has long been considered the historical gold standard for the surgical treatment of BPH and open techniques are reserved for large prostate (>90 cc) if Holmium laser enucleation of the prostate (HoLEP) are not available (23).

Conclusion

In this study it highlights that the increasing incident of Prostatic Hyperplasia is seen with majority of population with growing age. As we can see in many countries aging population are increasing in trends which means that the incidence of BPH might be increases in coming days. With increasing age from the study, it also highlights that the commodities such as diabetes, hypertension are might lead to more complication with BPH patients. From the study we can see that in treatment approaches huge number of populations they receive medical management while few they undergo surgical managements such as transurethral resection of the prostate (TURP). Overall, as a recommendation we would like to highlight on healthy dietary pattern, lifestyle modification early screening and diagnosis are essential for timely intervention and better management of BPH.

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