CODEN [USA]: IAJPBB ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

http://doi.org/10.5281/zenodo.1137636

Available online at: http://www.iajps.com Research Article

# PROSTATIC CANCER IN PATIENTS PRESENTING WITH LOWER URINARY TRACT SYMPTOMS

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**Abstract:**

***Objective:*** *To see the incidence of prostatic cancer in patients presenting with lower urinary tract symptoms.*

***Patients and Methods:*** *The one year descriptive case series study was conducted in the department of Urology - Liaquat University Hospital Jamshoro / Hyderabad. A total of 100 patients of age more than 50 years had lower urinary tract symptoms were included. The complete blood count (CBC), blood urea, serum creatinine, serum electrolytes,prostate specific antigen (PSA), random blood sugar (RBS), ultrasound abdomen and pelvis and prostatic biopsy were taken if required. The data variables with measurement scale were presented by their mean ± standard deviation and incidence of prostatic cancer was presented as percentages.*

***Results:*** *Incidence of prostate cancer in patients presenting with lower urinary tract symptoms was observed in 8.0%. Significant association of prostate carcinoma was observed with age groups, IPSS score, prostate weightandserum PSA level.*

***Conclusion:*** *It is concluded that our findings have implications for clinical practice: as the value of population-based PSA screening has yet to be demonstrated in randomized controlled trials. LUTS severity should not be used as a sole criterion of whether or not to screen for early prostate cancer.*

**Key Words:** *Prostatic carcinoma, Lower urinary tract symptoms, Transrectal ultrasound sonography, Digital rectal examination, Biopsy*

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*Please cite this article in press as Pooran Mal et al.,* ***Prostatic Cancer in Patients Presenting With Lower Urinary Tract Symptoms,****, Indo Am. J. P. Sci, 2017; 4(12).*

## INTRODUCTION:

Prostate cancer (PCa – prostate adenocarcinoma) is one of the most common malignancies and the second leading causes of cancer-related deaths among men [-3]. PCa is highly prevalent cancer found at autopsy among asymptomatic men [4, 5]. Prostate cancer incidence has been rising rapidly in most areas of the world in the past two decades [6] Age-adjusted incidence rates of prostate cancer also vary a great deal worldwide, [7] an estimated 29,480 deaths in 2014 with prostate cancer. Despite high morbidity and mortality, etiology of prostate cancer remains largely unknown [8]. Rates among African-Americans are highest (185.4 per 100,000 person-years) in the world followed by Caucasian-Americans (107.8/100,000 person years) [7, 9]. Incidence rates in Asian countries are relatively low (3–11 per 100,000 person- years), Age-adjusted incidence rate in Pakistan is 5.3 per 100,000 person-years [7, 9]. Which is slightly lower than India (6.8 per 100,000 person-years), but higher than rates in China (3.1 per 100,000 person-years) [7, 10-12]. Almost all Asian countries face significant increases in both incidence and mortality rates of this malignant disease [8, 13-16]. Early prostate cancer usually has no symptoms. With more advanced disease, men may experience weak or interrupted urine flow; the inability to urinate or difficulty starting or stopping the urine flow; the need to urinate frequently, especially at night; blood in the urine; or pain or burning with urination. Advanced prostate cancer commonly spreads to the bones, which can cause pain in the hips, spine, ribs, or other areas. The only well-established risk factors for prostate cancer are increasing age, About 60% of all prostate cancer cases are diagnosed in men 65 years of age and older, and 97% occur in men 50 and older. Genetic studies suggest that strong familial predisposition may be responsible for 5%-10% of prostate cancers.8 Three factors may be responsible for the rapid rise of prostate cancer incidence in Asian countries: population aging, westernized diet habit and widespread use of prostate-specific antigen (PSA) testing [6 ,17]. LUTS are extremely common, with half of men aged >65 years reporting symptoms [18, 19]. Previously the main cause of LUTS was thought to be prostatic enlargement, but it is now generally recognized that LUTS can be caused by cognitive, renal or bladder dysfunction, in addition to the enlarging prostate in the ageing male [18, 20]. LUTS is a symptom complex composed of storage and voiding phase symptoms. The storage phase symptoms consist of urinary urgency (a sudden compelling desire to void that is difficult to defer) with or without urinary urgency incontinence, urinary frequency (voiding 8 or more times per day), and nocturia (awakening one or more times at night to void) and the voiding phase symptoms include hesitancy, intermittent urinary stream, feeling of incomplete emptying, straining to void and post-void dribbling. The storage phase symptoms are those of OAB, a symptom complex, suggestive of underlying vesicourethral dysfunction [21]. Screening for early detection of prostate cancer is now being applied at some centers in Pakistan. But its usefulness in screening the men with LUTS needs yet to be determined in Pakistan. The study was proposed with the rationale to assess the magnitude of burden of prostate cancer in patients presenting with LUTS.

## PATIENTS AND METHODS:

The one year descriptive case series study was conducted in the department of Urology - Liaquat University Hospital Jamshoro / Hyderabad and was focused to determine the incidence of prostatic cancer in patients presenting with lower urinary tract symptoms. The inclusion criteria were male patients presented with lower urinary tract symptoms, age from 50 years and above while the exclusion criteria were male patients less than 50 years age and the patient who have factors with influence the elevated PSA, like prostatitis. The patients with lower urinary tract symptoms in urology ward and OPD of Liaquat University Hospital (LUH) were included in this study after fulfilling inclusion criteria. All relevant information regarding age, sex, history, examination (also included digital rectal examination), lab investigations were collected. On history symptoms relevant to lower urinary tract symptoms are nocturia, frequency and urgency were taken. The related physical examination was done. The investigations like, complete blood count (CBC), blood urea, serum creatinine, serum electrolytes, prostate specific antigen (PSA), random blood sugar (RBS), ultrasound abdomen and pelvis and prostatic biopsy were taken if required. All investigations were carried out from Department of Pathology of LUH and Diagnostic and Research Laboratory of Liaquat University of Medical and Health Sciences Jamshoro. All the collected data was filled on proforma as annex. The informed consent was taken from every patient. All the data of 100 patients entered in proforma were converted into database of SPSS version 16.0. The data variables with measurement scale like pulse, blood pressure, temperature and age were presented by their mean ± standard deviation and incidence of prostatic cancer was presented as percentages.

## RESULTS:

A total of 100 patients, presence of lower urinary tract symptoms according to inclusion criteria were

included in this study. The average age of the patients was62.84±9.25 years, with range of 34(50-84) years as shown in table 1. The overall mean duration of lower urinary tract infection was 4.38±2.88 months, with range of 14(1–15) months. The descriptive statistics of LUTS duration is presented in Table-2 while the frequency of prostate cancer is presented in Table-3.

**Table 1: Descriptive Statistics of Overall Age** (years) **(n=100)**

| | **Overall** (years) |
|---|---|
| **Mean** | 62.84 |
| **SD** | 9.25 |
| **Range** | 34 |
| **Minimum** | 50 |
| **Maximum** | 84 |

**Table 2: Descriptive Statistics of Luts Duration** (months) **(n=100)**

| | **Overall** |
|---|---|
| **Mean** | 4.38 |
| **SD** | 2.88 |
| **Range** | 14 |
| **Minimum** | 1 |
| **Maximum** | 15 |

**Table 3: Frequency and Association of Prostate Cancer with Age (n=100)**

| | **PROSTATE CANCER** | | | |
|---|---|---|---|---|
| | **YES** (n=8) | **NO** (n=92) | **TOTAL** | **P-Value** |
| **50 – 60 years** (n=23) | 3 | 20 | **23** | 0.020* |
| **61 – 70 years** (n=31) | 2 | 29 | **31** | |
| **71 – 80 years** (n=28) | 2 | 26 | **28** | |
| **> 80 years** (n=18) | 1 | 17 | **18** | |
| **TOTAL** | **8** | **92** | **100** | |

Chi Square Test was applied.
P-value ≤0.05 considered as significant
Significant at 0.05 level

## DISCUSSION:

Prostate cancer is the most common malignancy among males in Western Europe, Australia and North America. Although its burden in South East Asian countries is comparatively low, however, increasing numbers of cases are being reported which in part may be due to introduction of more sophisticated screening and diagnostic tools. Globally it is the second most common cause of cancer and the fifth leading cause of cancer-related death in men [22]. In 2012 it occurred in 1.1 million men and caused 307,000 deaths [22]. It was the most common cancer in males in 84 countries, occurring more commonly in the developed world. Rates have been increasing in the developing world [23]. Increase in age is consistently found to have a strong association with

prostate cancer risk [7]. In our study found the mean age of cases above 62 years. In present study, among total 100 patients the percentage of carcinoma was observed in 8.0%. Significant association of prostate carcinoma was found with age groups, IPSS score, prostate weight and serum PSA level. A large number of studies both on population with high prevalence to moderate level burden of disease indicated that prostate disease was more prevalent among men aged 65 and above (average 70 years) and probability of its occurrence enhances twofold after seventies [24]. It has been suggested that oxidative stress and other endogenous factors related with aging process might expose these individuals to develop the carcinomatous change in presence of other putative agents like strong family history of prostate cancer, exposure to environmental carcinogens and sedentary lifestyle. Ethnic background plays a vital role in explaining the variation in prostate cancer risk. The widespread use of PSA in clinical practice has led to an increased diagnosis of prostate cancer (PCa). [7] Carcinoma of prostate is becoming a common cancer problem in Pakistan due to increasing elderly population and improved methods of diagnosis [25]. According to first report from Karachi cancer registry, prostatic carcinoma ranks at number six among cancers in males in Pakistan with incidence rate of 5.4 per 100,000 person year [26].

## CONCLUSION:

Frequency of magnitude of burden of prostate cancer in patients presenting with LUTS was high. Our findings have implications for clinical practice: as the value of population-based PSA screening has yet to be demonstrated in randomized controlled trials.

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