Prostate Cancer In Patients Presenting With Lower Urinary Tract Symptoms

Mumtaz Ali,[1] Saeed Ahmed Khan,[1*] Naimatullah Tareen[1]

ABSTRACT

Objective *To determine the frequency of prostate cancer in patients presenting with lower urinary tract symptoms.*

Study design *Cross sectional study.*

Place & Duration of study *Department of Urology, Jinnah Postgraduate Medical Center (JPMC) Karachi, from January 2018 to December 2018.*

Methodology *Patients with age from 50-80 years, having lower urinary tract symptoms (LUTS) for three months or more, IPSS 15 to 35 and serum prostate specific antigen (PSA) > 4 ng/ml were included. Patients with any urological malignancy, previous prostate surgery, prostatitis, urolithiasis, renal failure or active UTI, were excluded. Data was collected on a pre designed form and analyzed using SPSS software.*

Results *A total of 125 patients were included. The mean age, International Prostate Symptom Score (IPSS) and PSA were 65.18±8.71 year, 25.59±6.68 and 9.11±7.74 ng/ml respectively. Dysuria was the commonest (n=80 - 64%) LUT symptom. Twenty-eight (22.4%) patients with LUTS were diagnosed as carcinoma prostate. Prostate cancer was barely significantly different in different age groups of the patients. Rate of prostate cancer was high with IPSS above 30.*

Conclusions *Nearly 1/4th patients with LUTS had prostate cancer. A high index of suspicion must be exercised in patients if LUTS persist for weeks with high IPSS.*

Key words *Prostate Cancer, Lower urinary tract symptoms, Prostate specific antigen.*

INTRODUCTION:

Cancer is among the leading causes of death around the globe.[1] About 14.1 million new cancer cases have been diagnosed in year 2012.[2] In males, prostate cancer (CaP) is one of the most common cancers all over the world. Worldwide, CaP is the leading cause of cancer related deaths in males.[3] It is a slow growing tumor and usually diagnosed early before it is too much advanced to be cured. Serum prostate specific antigen is a simple non invasive one step test used as a screening tool for CaP with sensitivity and specificity of 87% and 70.8%.[4,5] This has resulted in early detection of CaP and decrease in cancer related mortality.[6] Tunio et al reported that in 70% CaP are detected at very advanced stage.[7] In Pakistan there is no cancer registry available which can predict the incidence of CaP. In a study it was observed that 73% of the patients with LUTS had a fear of developing CaP at initial presentation.

LUTS are found in more than 50% males aged more than 60 years and almost 100% in men aged over 90 years.[9,10] Patients who have both LUTS and

[1] Department of Urology JPMC, Karachi.

Correspondence:
Dr. Saeed Ahmed Khan [1*]
Department of Urology
Jinnah Postgraduate Medical Center
Karachi
Email: narejo.saeed@gmail.com

benign prostatic hyperplasia (BPH) have increased risk of CaP.[11,12] Together they increase the chances of early cancer detection. Prostate cancer can be diagnosed on digital rectal examination (DRE) and by measuring serum PSA and confirmed on transrectal ultrasound (TRUS) guided biopsy of prostate due to variability of sensitivity and specificity of both DRE and Serum PSA.[13,14] The purpose of present study was to find out frequency of CaP in patient with LUTS at presentation.

METHODOLOGY:

This was a cross sectional study conducted in the Department of Urology, JPMC Karachi, from January 2018 to December 2018. A total of 125 patients were included in the study after Institutional Ethical Review Board approval. Patients included in the study were between the age of 50-80 years with LUTS of more than three months duration with IPSS score between 15-35 and serum PSA >4 ng/ml. Patients with previous history of prostate surgery, prostatitis, any urological malignancy, pelvic radiotherapy, urolithiasis, complicated obstructive uropathy and renal failure, were excluded. TRUS guided biopsy was taken as a day care procedure in patients with negative urine culture. Data of the all the patients collected in pre designed form. Data was analyzed using SPSS-20. Descriptive statistics like percentage mean and SD were used to describe data. Age and IPSS score were stratified to analyze the effect of these variables on the frequency of prostate cancer in patients who presented with LUTS. It was followed by application of Chi-square taking the P value less than 0.05 as significant.

RESULTS:

A total of 125 patients were included in this study. Mean age of the patients was 65.+ 8.71year. The IPSS and serum PSA level were 25.59+ and 9.11+ 7.74 ng/ml. Dysuria was the commonest LUT symptom that was observed in 64% (n=80) patients. Frequency of prostate cancer in patients with LUTS was 22.4% (n=28). Prostate cancer was barely significantly different among various age groups of the patients. The frequency of prostate cancer was high with IPSS above 30. Details are given in tables 1 –IV.

DISCUSSION:

Worldwide, CaP is ranked sixth in number among all cancers while in male it ranked as second most common cancer after lung cancer, but in Europe, parts of Africa and North America, it is the most common cancer in males.[15] In year 2000, about 5,13,000 new cases were estimated while in 2012 new cases were reported as 1.1 million, suggesting double increase in number in last decade.[16] It is expected that by 2030, about 1.7 million cases will be diagnosed and about 4,99,000 will die because of this disease.[17] Unfortunately in Pakistan, there is no screening program for detecting prostate cancer.

Relationship of CaP with LUTS has not been studied at community level. Previous studies conducted were mostly hospital based and thus biased.[18] In this context, Catalona et al conducted study in patients with LUTS for screening purpose on 6630

Table I: Descriptive Statistics of Age, IPSS and PSA

Variable	Mean	SD	Minimum	Maximum
Age (Years)	65.18	8.71	52	79
IPSS	25.59	6.68	15	36
PSA (ng/ml)	9.11	7.74	1	50

Table II: Frequency of Lower Urinary Tract Symptoms

Lower Urinary Tract Symptoms	Frequency	Count
Urinary Frequency	77	61.6%
Incontinence	71	56.8%
Urgency	79	63.2%
Hesitancy	79	63.2%
Dysuria	80	64.0%
Dribbling	77	61.6%
Incomplete Emptying	67	53.6%
Hematuria	73	58.4%
Nocturia	68	54.4%

Table III: Frequency of Prostate Cancer in Patients Presenting with Lower Urinary Tract Symptoms with Respect to Age Groups

Age Groups (Years)	Prostate Cancer		
	Yes n=28	No n=97	Total
> 55 Years	9 (39.1%)	14 (60.9%)	23
56-60 Years	5 (17.9%)	23 (82.1%)	28
61 to 65 Years	5 (38.5%)	8 (61.5%)	13
66-70 Years	0 (0%)	16 (100%)	16
71 to 75 Years	6 (23.1%)	20 (76.9%)	26
>75 Years	3 (15.8%)	16 (84.2%)	19

Chi-Square=11.07; p=0.05

Table IV: Frequency of Prostate Cancer in Patients Presenting with Lower Urinary Tract Symptoms with Respect to IPSS

IPSS	Prostate Cancer		
	Yes n=28	No n=97	Total
< 7	7 (20%)	28 (80%)	35
8 to 20	4 (7.7%)	48 (92.3%)	52
>20	17 (44.7%)	21 (55.3%)	38

Chi square = 17.49 p=0.005

men and found that the presence of LUTS in patients is more predictive of having cancer than those without LUTS. [19] That was the first study which highlighted the relationship of LUTS with CaP in a community setting. However, there were many drawbacks in their study such as they included not only LUTS but also hemturia and hematospermia as symptoms. For evaluating LUTS, they did not use self validated questionnaire for patients and age was not taken as confounding factor.

It is seen that 18-26% of men between 40-79 years have bothersome LUTS, while in nearly 100% of men aged 90 years have LUTS.[20] Dysuria was the commonest LUT symptom that was observed in 64% cases in our study. Our results are almost similar to a study conducted in Japan.[21]

Porter and Kim conducted a study by using American Urological Association Symptom Score (AUASS) in outpatient department and found that patients having mild AUASS (0-7) had CaP on biopsy of prostate (P=0.0002).[22] But they did not comment about the association of mild AUASS with increased risk of developing CaP. However, in their study, it was found that mean AUASS and mean prostate size for biopsy proven CaP was significantly lower to those who did not have CaP on biopsy. They found prostatic volume was the strongest predictor of positive biopsy (P< 0.0001) in logistic regression analysis. According to above mentioned findings, men who have lower AUASS are at higher risk of CaP probably correlating AUASS with prostatic volume. In our study 7 (25%) patients with mild IPSS (0-7) had CaP which is contrary to finding of Porter et al.[22]

In same study, Porter and Kim found that patients who did not have LUTS were found to have CaP on biopsy especially in those with serum PSA level of 4 – 10 ng/ml . Races might have influence on CaP incidence. In the same study 62% of the patients were African American while 38% were white.[22] Catalona et al reported in their study that absence of LUTS in patients who had CaP on biopsy than those patients with LUTS, but this was not discussed in this study.[19] Several investigators have reported that men with LUTS have fear of developing CaP than asymptomatic men and for this they must consult urologist early for diagnosis.[6,23]

CONCLUSIONS:

Patients presenting with LUTS have high suspicion of prostate cancer as found in this study.

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