



## Correlation of Serum PSA With Prostate Size

Tariq A Mir, Bilal A Rather, Azhar Ajaz Khan

Rawalpora Wanbal, Srinagar

\*Corresponding Author:

Azhar Ajaz Khan

Rawalpora Wanbal, Srinagar

Type of Publication: Original Research Paper

Conflicts of Interest: Nil

### Abstract

**Aim Of Study:** To study the correlation of serum PSA level and prostate size.

**Materials & Methods:** This was a prospective comparative study enrolling 94 male patients with LUTS over 40 years of age. All the patients completed the IPSS and VPSS, serum PSA level was noted and prostate size measured on ultrasonography and all these parameters correlated with prostate size.

**Conclusion:** There is no significant correlation between PSA and IPSS, VPSS or prostate size

**Keywords:** NIL

### Introduction

Across the globe including India among elderly men, Benign prostatic hyperplasia (BPH) is one the leading causes of Genito-urinary disease.<sup>[1]</sup> The prevalence of BPH is greater than 50% by the age of 60 years and by age 85 is as high as 90%, Of these, between 15% and 30% patients have lower urinary tract symptoms (LUTS).

The actual impact of LUTS on the patient's quality of life varies widely and it is the degree of this dysfunction that determines the choice of treatment. Measurement of the size of prostate and the severity of bladder outlet obstruction (BOO) correlate poorly with the severity of LUTS.<sup>[2,3]</sup>

### Materials And Methods:

Male patients of age >40 years complaining of LUTS due to BPH were included, Patients with neurogenic bladder and Patients with urethral stricture were excluded from this study. Prostate-specific antigen assay and ultrasonography was done in all the cases to measure the prostate size. All the patients completed the IPSS and VPSS questionnaire. The patients who were unable to complete the questionnaire on their own were assisted by a reliable relative or doctor.

### Observation & Results:

The most frequent clinical symptom at presentation was increased urinary frequency, seen in 44 (46.8%) patients followed by complaints about weak urinary stream in 27(28.7%) and nocturia in 16(17.0%) patients. Other obstructive and storage symptoms were rare. Just over one-fifth of our patients (21.3%) had symptoms for more than 7 months, followed by 19% patients with symptoms lasting less than 2 months of duration before they presented to hospital. Only 13.8% patients presented within one month of symptom duration. USG findings suggest that the minimum size of the prostate was 11gms and maximum was 120 gm with an average of 39.8 gm. The other finding observed was volume of urine pre void and post void which varied from 93-900 ml and 0 to 600 ml respectively. In our study enrolled patients had mean( $\pm$ SD) value of PSA of 2.75( $\pm$ 7.12) ng/dl and values ranged from 0.44 to 11 ng/dl. Weak stream troubled majority of our patients, while only 23 said they never endured weak stream. Twenty one patients complained of weak stream less than half the time, while 22 had weak stream about half the time

and 12 had more than half the time for last one month.

Straining was seen to have varied severity in 56 patients whereas 38 patients reported to be free of the symptom. For past one month nocturia was seen in 25 patients for less than half the time, 16 had for half the time, 19 had for more than half the time and 13 had almost always. Over one-third of patients

(35.1%) were pleased with their quality of life according to IPSS scoring system and 14.9% patients were mostly satisfied though a similar percentage reported to be unhappy. Only 1% patients were in terrible situation as per IPSS score collected.

In our study no statistically significant correlation was observed in the values of PSA with respect to prostate size, table 1

**Table1. Correlation of PSA with prostate size**

		Prostate size
PSA	Pearson Correlation	0.200
	p-value	0.053

Similarly no statistically significant correlation was observed with the size of the prostate with respect to IPSS and VPSS scoring.

**Discussion:**

Storage symptoms in order frequency are nocturia, urgency and frequency, whereas obstructive symptoms in decreasing order are Weak stream, Straining Intermittency and incomplete emptying. Similar observations were made by Liu et al<sup>[4]</sup> in their study. Majority of patients have moderate symptoms on IPSS, followed by mild symptoms. Most people are satisfied or have mixed response related to bother caused by LUTS when questioned about quality of life. PSA is not a good predictor for prostate volume and hence it is unable to accurately gauge the prostate size in BPH. Prostate volume had no correlation with symptom score and quality of life score, other studies also observed same<sup>3, 5, 6</sup> that conclude that the size of the prostate does not determine the severity of lower urinary tract symptoms in men with enlarged prostate hence prostatic size should not be an only and important consideration to decide treatment<sup>[7,8]</sup>. Objective measurements of LUTS by scoring systems are key outcome measures for judging the success of treatment in clinical practice.

**References.**

1. Saigal CS, Joyce G. Economic costs of benign prostatic hyperplasia in the private sector. *J Urol* 2005;173:1309-13.
2. Barry MJ. Evaluation of symptoms and quality of life in men with benign prostatic hyperplasia. *Urology*. 2001; 58(6 Suppl 1):25-32; discussion
3. Agrawal CS, Chalise PR, Bhandari BB. Correlation of prostate volume with international prostate symptom score and quality of life in men with benign prostatic hyperplasia. *Nepal Med Coll J*. 2008 Jun;10(2):104-7. PMID: 18828432.
4. Wang JY, Liu M, Zhang YG, Zeng P, Ding Q, Huang J, et al. Relationship between lower urinary tract symptoms and objective measures of benign prostatic hyperplasia: A Chinese survey. *Chin Med J (Engl)*. 2008;121(20):2042-5.
5. Barry MJ, Girman CJ, O'Leary MP, Walker-Corkery ES, Binkowitz BS, Cockett AT, et al. Using repeated measures of symptom score, uroflowmetry and prostate specific antigen in the clinical management of prostate disease. Benign Prostatic Hyperplasia Treatment Outcomes Study Group. *J Urol*. 1995; 153(1):99-103
6. Ima-Abasi E. Basse, Edoise M. Isiwel, Sunday E. Eyam, David E. Ushie, Nchiewe E. Ani.

- Correlation of international prostate symptom score with prostate volume and quality of life in a screened population of university workers. International Journal of Contemporary Medical Research 2018;5(1):15-17
7. Alawad AAM, Elamin SM, Younis FH. Correlation between prostate volume and lower urinary tract symptoms in Sudanese patients with benign prostatic hyperplasia. Basic Res J Med Clin Sci. 2015;4:121–124.
8. Ofoha CG, Shu SI, Akpayak IC, Dakum NK, Ramyil VM. Relationship Between Prostate Volume And IPSS In African Men With Prostate Disease. Jos J Med. 2013;9:16–19