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High Levels of the PSA (Prostate Specific Antigen) In Patients with Benign Prostatic Hyperplasia and Prostate Cancer

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Abstract

Objective: The objective of this study was to evaluate high levels of PSA (Prostate specific antigen) in BPH (benign prostatic hyperplasia), prostate cancer, chronic and granulomatous, Benign Prostatic Hyperplasia, Chronic and Granulomatous Prostatitis, Prostate Adeno Carcinoma and in many non cancerous conditions and its importance in clinical and subclinical cases. Secondly was also to identify PSA isoforms, other biomarkers, enzymes involved in biosynthesis of androgens and various inflammatory mediators.

Material and Methods: In our research we examined 80 patients at National Centre of Urology Histopathological Department in Tbilisi, Georgia using Gleason's gradation system. we divided patients into 3 groups classified as BPH (benign prostatic hyperplasia) in group 1, chronic granulomatous prostatitis in group 2 and prostate adenocarcinoma with different grades in group 3 and measured PSA levels via Gleason's gradation 2-10 and ISUP (induced modification to Gleason's grading system and its importance in clinical and subclinical cases. Significance of the proposal is to evaluate the level of PSA in BPH, prostatitis and prostate cancer.

Results: After our examination we found different PSA levels in different cases such as 30 patients with BPH (benign prostatic hyperplasia) had PSA level 4.5-17ng/ml, 14 patients with chronic granulomatous prostatitis had 10-70 ng/ml and in 36 patients with Prostate adenocarcinoma had 2.9-250 ng/ml. All these patients were in age group between 55-78 years.

Conclusions: According to the results that have been taken from the biopsies in each category of diseases need different management. We will continue our research in patients with BPH, prostatitis and prostate cancer for evaluating the spectrum of PSA level for further research material, study or investigations.

Keywords: BPH, ISUP, PSA levels, Prostatitis, Prostate cancer

Introduction

PSA (prostate specific antigen) is one of the oncological marker in Prostate cancer and use in the diagnosis and prognosis in conditions such as BPH (benign prostatic hyperplasia) and prostatitis. It is secreted from the columnar epithelium of the prostate. PSA belongs to kallikrein related gene family located at locus q13.2-q13.4 on long arm of the chromosome 19. Variations in the levels of PSA have been seen in both cancerous and non cancerous conditions such as BPH, Prostate cancer, chronic and granulomatosus prostatitis, age related increment and also among some bike riders. Biopsies and surgeries may elevate PSA levels. Prostate cancer is leading causes of cancer death in 24 countries ranking 8 globally. It's most common in Australian men and 2nd most common cause of mortality Each year 3300 men dies of Prostate cancer. PSA has its 3 isoforms known as fPSA (free), BPSA and iPSA Studies has been performed in 5 Biopsy positive individuals by taking 100-200 ml of serum and it was found that 25-95% of pro PSA than 9-19% of fPSA [1]. Along with fPSA other factors PSAD (cutoff value of 0.15) and PSAV (cutoff value of 0.75) might be helpful in assessing prostate cancer with serum levels of 4-10ng/ml [2]. In population based studies of Shanghai, China we have seen T to C substitution in gene CYP17 and resulted in increase expression of this gene due to variation because enzyme P450c17α is associated with the biosynthesis of androgens and androgen plays a very important role in prostate growth in BPH and prostate cancer [3]. The main objective is to investigate high levels of PSA in BPH (benign prostatic hyperplasia), prostate cancer, chronic and granulomatous prostatitis. We are taking prostatis under consideration because

it may or may not be associated with BPH, Prostate cancer or prostate disease. Prostatitis group is decided on the basis of extent, tissue or inflammatory cell types involved. Proliferation of inflammation with markers has been seen via radiolabelled thymidine by Immunohistochemical staining [4].

Materials and Methods

Pathologists and urologist examines PSA levels on the basis of Gleason's score 1-10 and ISUP induced modification to Gleason's grading system. In Gleason's score 1-10 grade 6 can be misunderstood as a cancer but new modified system can be viewed as (3+3). According to Gleason's original 1-5 grading pattern which was created by Donald F. Gleason in 1966 denotes grade 1-3 as tumors indicating normal prostate gland whereas 4-5 as abnormal pattern gland [5]. A total of 2526 volunteers of age 40 or more whose PSA levels were > 4ng/ml or > 2.5ng/ml underwent 1 or more prostate biopsies or DRE (digital rectal examination) Serial Biopsies despite of identifying unimportant tumors it detects organ confined tumors [6]. MRI (magnetic resonance imaging) and targeted biopsies shows more accurate diagnosis than systemic biopsies but Georgian people prefer 1st Biopsy then MRI because MRI is very costly but individuals in developed Countries can afford MRI 1st and then Biopsy in increased PSA levels (**Figures 1-3**).

Significance for the Proposal

Studies found out in individuals of age 50-70 has active disease because of normal hormonal levels but person of >75 are not under active as a result of age related decline in androgens.914 volunteers of age 50 or more with PSA levels 2.5ng/ml or > 4ng/ml who had benign prostate examination and 36% of whom underwent biopsy. Cancer was detected in 22% individuals with biopsies and 10% are found with low grade and low volume tumors. All the tumors were restricted to its place clinically

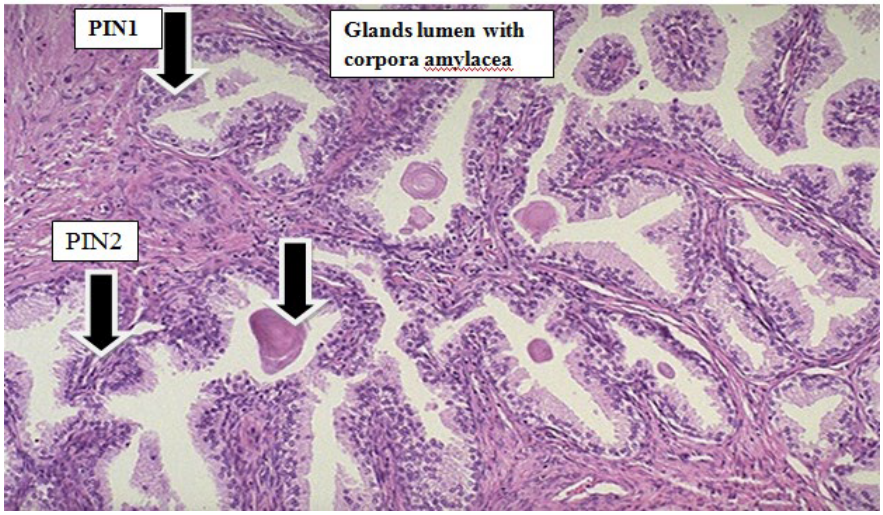

Figure 1 BPH (PIN1-PIN2): The glands lumen with Corpora *amylacea*.

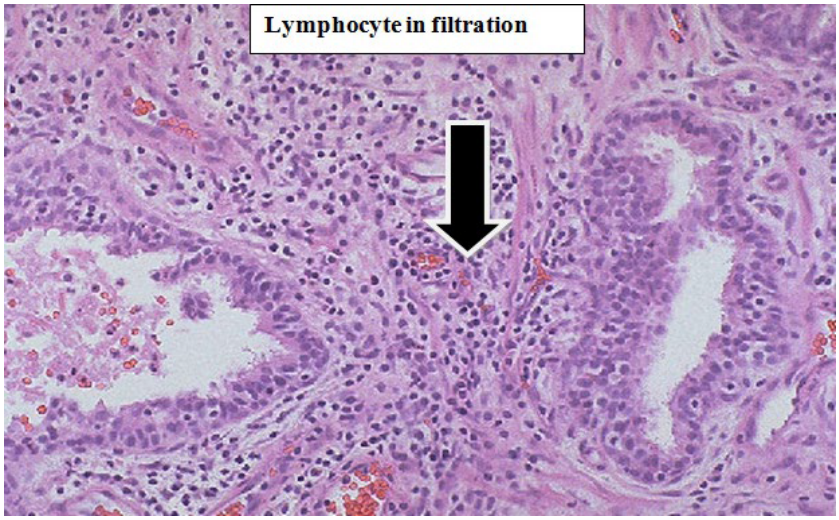

Figure 2 Chronic Prostatitis (The stroma with lympho-histiocytes cells infiltration).

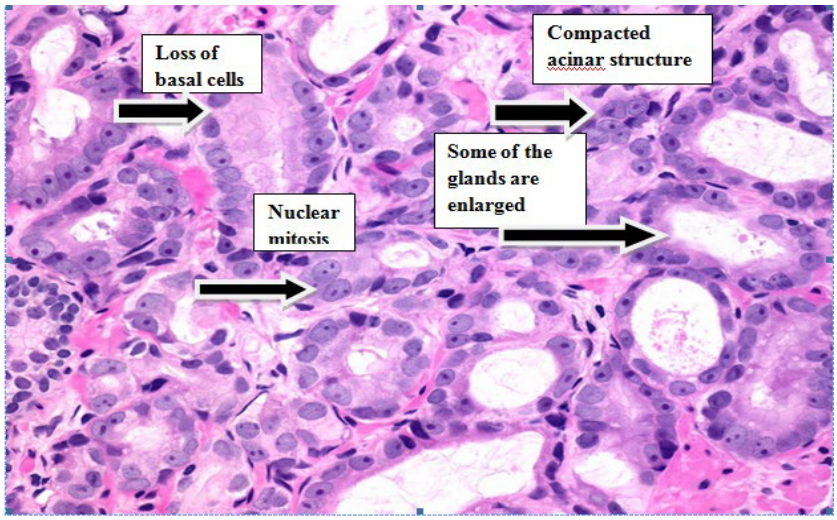

Figure 3 Prostate adenocarcinoma in Gleason 6 (3+3).

Table 1: Content table shows total serum PSA in Patients with BPH, chronic and granulomatous prostatitis and prostate adenocarcinoma in all patients age between 55 to 78 years.

	Number of Patients	Total PSA ng/ml
BPH	30	4.5-17
Chronic Granulomatous Prostatis	14	10-17
Prostate Adenocarcinoma	36	2.9-250

[7]. Researchers has examined in screening of 148 men that inflammation, effects of prostate volume affects PSA levels. Acute and chronic inflammation were more prevalent in high PSA groups hence it's concluded that in determining serum PSA levels in men prostate volume and inflammation are very beneficial factors without having clinically significant prostate cancer (Table 1) [8,9].

Results and Conclusion

According to our investigations not all patients with high PSA levels need surgical resection of the prostatic glands. Based on Gleason's score according to the histological investigation and the guidelines from the European association of urology (EAU) and also from the International Society of Urological Pathology (ISUP) with the gradation system Score 1 to 5 based on Gleason's Score, some patients with Prostate c cancer should undergo operation others hormone therapy and others brachytherapy. Patient with enlarged prostate gland (BPH) and urinary incontinence should receive TURP (transurethral resection of the prostate). Patient with chronic prostatitis should receive medication of antibiotic therapy.

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References

1. Millar, Kathy S (2001) Truncated isoform of PSA is a specific marker. J Cancer Res 61: 18.
2. Lee SC, Kim WJ (2004) Value of PSAD and PSAV in predicting prostate cancer. Prostate Cancer Prostatic Dis 48: 747-52.
3. Madigon MP, Gao YT (2003) CYP17 gene polymorphism in prostate cancer. J Cancer Epidemiol 107: 271-75.
4. Nickel JC (2001) Histopathological classification system for chronic prostatitis. BJU Int 87: 797-805.
5. Montironi R, Cheng L (2010) Original Gleasons Grading Versus ISUP Modified. Europ Urol 58: 369-73.
6. Roehl KA, Antenor JA (2002) Serial biopsy results in prostate cancer screening. J Urol 167: 2435-39.
7. Catalona WJ, Smith DS (1997) Prostate cancer detection in men with serum level 2-6 ng/ml and Benign Prostate examination. JAMA 277: 1452.
8. Nadler RB, Humphrey PA (1995) Effects of inflammation and BPH on serum PSA levels. J Urol 154: 407-13.
9. Wallace WC, Luo JJ, Wallace M (2001) A truncated form of secreted amyloid precursor protein induces apoptosis of neurons in culture. Neurobiol of Aging 21: 260.