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A Study of PSA in The Different Age Group of Prostate Carcinoma Patient

KEYWORDS: Prostate Specific Antigen, Age Group, ELISA Test

* Hasan kamal	Deepesh Kumar
S.V.B.P hospital, LLRM Medical College Meerut UP. *Corresponding author	S.V.B.P hospital, LLRM Medical College Meerut UP.

ABSTRACT *Introduction: Prostate cancer (PC) is the third most commonly diagnosed cancer in men, and the sixth most commonly diagnosed cancer overall (American Institute for Cancer Research & World Cancer Research Fund (AICR & WCRF), 2007). Aim: study was design to assess the diagnostic importance of prostate specific antigen (PSA) in different age group of prostate carcinoma patient. Material & Methods: A 128 cases of prostate carcinoma include in this study and ELISA was done. Conclusion: We thus conclude that carcinoma is a disease of senile of age group and its early diagnosis is possible in the initial stage with the help of some specific investigation like PSA level, help in the screening and follow up the patients to evaluate the progression of disease*

INTRODUCTION

Prostate cancer (PC) is the third most commonly diagnosed cancer in men, and the sixth most commonly diagnosed cancer overall (American Institute for Cancer Research & World Cancer Research Fund (AICR & WCRF), 2007). PC is the malignant growth of prostate gland cells[1]. Prostate-cancer screening based on the serum prostate-specific antigen (PSA) test was introduced in the USA around 1990 and is almost routine in the USA; in 2001, 57% of men aged 50 years or older reported having a PSA test within the previous 12 months.[2] By contrast, for each year between 1999 and 2002, an estimated 6% of men aged 45–84 years were tested in the UK.[3]

There is no robust evidence that routine PSA testing decreases prostate-cancer mortality.[4,5] The overall decline in mortality from prostate cancer in the USA since the early 1990s might be attributable to screening or improved treatment for more advanced disease,[6-12] but other research has suggested that mortality trends cannot be attributed to differences in screening intensity, either between or within countries.[13-17]

Measurement of serum prostate-specific antigen (PSA) has become the most common event leading to the diagnosis of prostate carcinoma and may be the most commonly used cancer clinical test. The introduction of routine PSA-based screening over the past 20 years has led to a dramatic increase in the rate of disease detection and a subsequent stage shift at the time of diagnosis. For the past decade or more, a PSA value of 4.0 ng/mL has been considered to be the upper limit of normal (ULN). Challenging this long-held notion was a recent report from the Prostate Cancer Prevention Trial (PCPT).[18] therefore this study were design to assess the diagnostic importance of prostate specific antigen(PSA) in different age group of prostate carcinoma patient.

MATERIAL AND METHODS

A 128 cases of prostate carcinoma admitted to S.V.B.P hospital attached to L.L.R.M Medical college, Meerut.Out of which 60(20 were up to the age 65 and 40 were of 65 years onwards.).Sixty normal healthy subjects were also included to serve as control.

Estimation of prostate specific antigen (PSA); Blood samples (5 ml) were collected[19] and serum was separated.

Samples were assayed by using Enzyme linked immunosorbent assay (ELISA) test.

Calculation of Result; Use the mean absorbance values for each specimen to determine the corresponding concentration of PSA in ng/ml from the standard curve.

RESULTS AND OBSERVATION

Table.1: Age wise distribution of patients and control.

S. no.	Age group	Control	No. Of patients	Percentage (%)
1	Uo to 65	20	23	17.96
2	65 onwards	40	105	82.03
3	Total	60	128	99.99

The majority of patients were in the age group of 65 years onwards then the patients were found in the age group of upto 65 years.

Table.2: Prostate specific antigen level in normal healthy subjects.

Antigen ng/ml	Upto the age of 65 years (n=20) mean±S.D	65 onwards (n=40) mean±S.D	Total mean ±S.D (n=60)
P.S.A	1.80±0.88	1.92±0.76 ns	1.84±0.82

NS= Non Significant

Serum enzymes and antigen levels were estimated in sixty normal healthy subjects. The levels of serum enzymes and antigen in male of age group 65 onwards were slightly higher than upto 65 years' males. But the difference was statistically insignificant.

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Table.3: Prostate specific antigen level in normal healthy males and B.P.H

Antigen Ng/ml	Normal healthy males(n=6) mean±S.D	B.P.H(n=60) mean±S.D	Significance
P.S.A	1.84±0.82	1.92±0.64	NS

Serum enzymes and antigen in prostate carcinoma patients were estimated and on compared with that of control subjects, no significant variation was observed.

Table.4: Prostate specific antigen level in normal healthy males and prostate cancer patients.

Antigen Ng/ml	Contral (n=60) mean±S.D	Prostate cancer patients(n=128) mean±S.D	Signifi-cance P-value
P.S.A	1.84±0.82	22.31±0.44	<0.001

The levels of serum prostate specific antigen in healthy control subjects and prostate cancer patients were estimated and compared with each other. A significant elevation of serum PSA level in PC patients was observed as compared to corresponding control values.

Table.5: Prostate specific antigen level (ng/ml) baseline and at different time points after treatment in total the cases of prostate carcinoma.

Interval	No. Of cases	Prostate specific antigen (ng/ml) mean± s.d
Control	60	1.84±0.82
Before treatment or baseline value	128	15.05 ± 0.51***
2 weeks after treatment	128	1.76 ± 0.52
1 month after treatment	118	1.64 ± 0.28
2 month after treatment	114	1.58 ± 0.36
3 month after treatment	107	1.16 ± 0.47
4 month after treatment	101	1.14 ± 0.44
5 month after treatment	94	1.12 ± 0.42
6 month after treatment	90	1.92 ± 0.52

p- Significant,*p<0.001**
Values of antigen in prostate carcinoma patient's baseline and at different time points Vs respective controls.

DISCUSSION

On the basis of age , patients were divided in to 2 groups namely up to 65 yrs,65 onwards incidence of carcinoma was found increasing in manner with the progression of disease Scardino,1989[20] found in his study the prevalence of prostatic carcinoma 15% in 6th decade,30% in 7th decade, 40% in 8th decade and 50% in 9th decade. However in our study, it was 27% in 6th and 7th decade, 73% in 8th and 9th decade. Incidence of carcinoma prostate was less only in 9th decade, because most of the patients presented in this age group were in the advanced stages of disease Lew and Garfinkal (1990) showed in their study that the frequency of carcinoma prostate climbs steeply with age to peak or plateau in the 9th decade for both incidence and mortality rate.

PSA in healthy subjects, mean 1.84±0.82 ng/ml. No significant age wise variation in serum PSA level was noted in this study similar values have been obtained by Dalkin B and Southwick P 1993[21], Stamey T.et al 1995[22] and Vassilikos et al 2000[23].

PSA was diagnostic in 85.9 %(110 out of 128) cases. its initial serum level (mean±S.D 15.05±0.51) which was significantly high (p<.001) as compared to control. the level remained high throughout the study but normal levels were seen in the cases who responded well to the therapy and had clinical remission from disease.

All the sixty cases of BPH showed normal level of PSA. In contrast to this several authors reported that serum PSA level may also be elevated in BPH Chan et al 1990[24], Germley et al 1993.

CONCLUSIONS

We thus conclude that carcinoma is a disease of senile of age group and its early diagnosis is possible in the initial stage with the help of some specific investigation like PSA level, help in the screening and follow up the patients to

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