Clinical Epidemiology of Carcinoma of Prostate: an Institutional Experience

Abstract

Purpose: Cancer of the prostate (PCa) is now recognized as one of the most important medical problems facing the male population. As there are only few studies about this entity in eastern India, Here we wish to present the experience with demographic profile, clinical features, stage and treatment protocol offered to carcinoma prostate patient.

Materials and Methods: This was a retrospective study of a total sixty four patients, who were diagnosed with prostate carcinoma between January 2011 to December 2014 in the Urology Department of I P G M E R and S S K M Hospital, Kolkata. The case records of these sixty four cases were analyzed for demographic profile clinical presentation, stage & treatment. An online literature search was made from Pub MED indexed journal.

Results: Most of the patients were in the 8th decade of life (median age was 73). Most of the patients were positive for at least one risk factor. Prostatism was the most common presentation (75%). 88% of patients were pale. Obstructive uropathy was present in 26.5%. D R E was suspicious in 34.6% cases and first P S A value was more than 10n.g./ml in 93.7% cases. Forty nine out of sixty four cases were locally advanced stage at the time of presentation.

Conclusion: CA prostate is a disease of advance age with the non specific presentation. By judicious screening with combination of P S A and D R E clinically localized disease state can be increases resulting in a better chance of cure. Although most patients have more than one risk factor, further studies are needed to confirm the role of modifiable risk factor and preventive agent in its management.

Keywords: Carcinoma; Diagnosis; Prostate; Risk factors

Research Article

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Introduction

Cancer of the prostate (PCa) is now recognized as one of the most important medical problems facing the male population. In Europe, PCa is the most common solid neoplasm, with an incidence rate of 214 cases per 1000 men, outnumbering lung and colorectal cancer [1]. World Wide prostate cancer is the sixth leading cause of cancer related death in men [2]. Its rate of detection varies across the world with a very low detection rate in South & East Asia. As there are only few studies about this entity in eastern India, Here we wish to present the experience with demographic profile, clinical features, stage and treatment protocol offered to carcinoma prostate patient.

Material & Method

This was a retrospective study of a total sixty four patients, who were diagnosed with prostate carcinoma between January 2011 to December 2014 at the Urology Department of I P G M E R and S S K M Hospital, Kolkata. The case records of these sixty four cases were analyzed for demographic profile clinical presentation, stage & treatment. Detailed data of these sixty four cases are summarized in (Table 1). Online literature search was made from Pub MED indexed journal.

Table 1: Risk Factor of carcinoma prostate.

Risk Factor		No. of Patient (%)
Family History		2
Body mass index (In kg./m^2)	Underweight (<18.5)	4 (6.25)
	Normal weight (18.5-24.9)	28 (43.75)
	Overweight (25.0 -29.9)	27 (42.18)
	Obese (>30)	5 (7.8)
Hypertension		22 (34.37)
Diabetes		14 (21.86)
Marital status		64 (100)
Smoker		27 (42.18)
Alcohol intake		13 (20.32)
Non vegetarian		31 (48.42)
Sexual transmitted infection		8 (12.5)
Vasectomy		18 (28.12)

Results

Most of the patients were in the 7th decade of life (median age was 73). Most of the patient was positive for at least one risk factor (Table 1). Most of our patients were from rural area (67.18%) and most of them were of low socioeconomic status (87.50%) (Table 2). Prostatism was the most common presentation (75%). 88% of patients were pale. Obstructive uropathy was present in 26.5% (Table 3). D R E was suspicious in 34.6% cases and first P S A value was more than 10 ng./ml in 93.7% cases (Table 4). After complete work-up, Forty nine out of sixty four cases were locally advanced stage at the time of presentation (Table 5).

Table 2: Demographic profile of the ca prostate patient.

Rural Background	Urban Background	Total
43(67.18%)	21(32.81%)	64
Low socio-economic status -56(87.50%0	High socioeconomic status-6 (9.37%)	64

Table 3: Clinical presentation of ca prostate patient.

Clinical Presentation	No. (%)
Prostatism alone	48 (75)
Urinary retention	11 (17.18)
Hematuria	8 (12.5)
Bone pain	5 (7.8)
Severe wt. Loss	5 (7.8)
Lymphedema of lower limbs	14 (21.6)
Rectal symptom (pain, bleeding, constipation)	17 (26.5)
Haemoglobin concentration less than 10 gm.	57 (89.06)
Serum creatinine more than 2 mg/dl.	17 (26.56)
Hydronephrosis	13 (20.31)
Osteosclerosis	10 (15.6)

Table 4: Showing the result of the basic work-up of Ca prostate patient.

		Number (%)
Serum Prostate Specific Antigen	<4	1 (1.5)
	4-10 ng/ml	3 (4.6)
	>10 ng/ml	60 (93.7)
Digital Rectal Examination (suspicious)		22 (34.36)
Gleason scores	2-6	Nil
	7	11
	8-10	53
Stage	Clinically localized	4
	Locally advanced	49
	With metastasis	11

Table 5: Showing the treatment done.

Treatment*	No. of Patient
Hormonal manipulation (androgen depleting or blocking)	60
Subcapsular orchiectomy and radiotherapy	60
Radical prostatectomy	4

Discussion

As of 2011, prostate cancer is the second most frequently diagnosed cancer and the sixth leading cause of cancer death in males worldwide [3]. Rates of prostate cancer vary widely across the world. It is a bigger health concern in developed countries having 15% incidence among all male cancers, in contrast to developing countries in which 4% of male malignancies are prostate cancer [4]. According to the American Cancer Society, prostate cancer is least common among Asian men and most common among black men; Prostate cancer frequency is lower in India as compared to Western countries [5]. In India the majority of cancer is diagnosed in the advanced stage and hence morbidity remains high. Beside this cancer mortality rates are under-reported due to poor recording of the cause of death. Incorporating screening, detection and treatment of diseases like cancers into peripheral health infrastructure has a significant effect on reducing mortality from these diseases [6].

The factors that determine the risk of developing clinical PCa are not well known, although a few have been identified. There are three well-established risk factors for PCa: increasing age; ethnic origin and heredity. In our study, most of the patients were in the 8th decade of life. Exogenous factors affect the risk of progression from so-called latent PCa to clinical PCa. Factors such as food consumption, patterns of sexual behaviour, alcohol consumption, exposure to ultraviolet radiation, chronic inflammation and occupational exposure have all been discussed as being aetiologically important [7,8]. Several ongoing large randomized trials are trying to clarify the role of such risk factors and the potential for successful prostate cancer prevention [9]. Evidence from epidemiological studies supports protective roles in reducing prostate cancer for dietary selenium, vitamin E, lycopene, soy foods and recommended lifestyle changes by lowered intake of animal fat and increased intake of fruit, cereals and vegetables in order to decrease the risk [10]. Daily use of anti-inflammatory medicines, cholesterol-lowering drugs may also decrease prostate cancer risk [11].

About a third of patients diagnosed with prostate cancer have one or none lower urinary tract symptoms, while two thirds have no symptoms [12]. Prostate cancer may also cause problems with sexual function and performance, such as difficulty achieving erection or painful ejaculation [12]. The most common metastatic symptom is bone pain, often in the vertebrae, pelvis, or ribs. Spread of cancer into other bones such as the femur is usually to the proximal part of the bone. Prostate cancer in the spine can also compress the spinal cord, causing leg weakness and urinary and fecal incontinence [13]. In our study, prostatism was the main presenting complaint in 75% of patients. 17.2% of total patients had metastasis at the time of presentation.

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The main diagnostic tools to obtain evidence of PCa include DRE, serum concentration of PSA and transrectal ultrasonography (TRUS). Most prostate cancers are located in the peripheral zone of the prostate and may be detected by DRE when the volume is about 0.2 ml or larger. In about 18% of all patients, PCa is detected by a suspect DRE alone, irrespective of the PSA level [14]. A suspect DRE is a strong indication for prostate biopsy as it is predictive for more aggressive (Gleason score > 7) prostate cancer [15, 16]. In our study, 34.8% patient had suspicious rectal finding. In our institution we always go for TRUS guided biopsy when there is suspicious DRE to increase the yield of detection of prostatic carcinoma.

The measurement of PSA level has revolutionized the diagnosis of PCa [17]. PSA is a kallikrein-like serine protease. The level of PSA as an independent variable is a better predictor of cancer than suspicious findings on DRE or TRUS [18]. Prostate-specific antigen testing increases cancer detection but the rate does not decrease mortality [19]. The United States Preventive Services Task Force in 2012 recommended against screening for prostate cancer using the PSA test, due to the risk of over-diagnosis and over-treatment with most prostate cancer remaining asymptomatic. But in this part of the world, where patient awareness, access to health care facility, compliance to health check-up is low; the inclusion of routine screening may increase the number of patient with clinically localized disease. In our study this point is also reflected as without screening more than 93% patients have P S A value greater than 10 ng/ml. Even in our institution we advise TRUS guided biopsy if serum PSA is more than 4ng/ml, in the absence of any urinary tract infection or if repeat serum PSA is more than 4ng/ ml, after the control of urinary infection. In our experience this increases the diagnostic yield of prostatic carcinoma.

The ISUP 2005 Gleason score is the current standard for grading adenocarcinoma of the prostate on core biopsy and operative specimens [20]. In Our Study, all the patients had Gleason sum 7 or more. Because of the advanced stage of presentation, radical prostatectomy was done in only four patients. There are few limitations in this study. First one is its retrospective nature and second, it was done in a tertiary care centre which may result in selection bias.

Conclusion

CA prostate is a disease of advance age with the nonspecific presentation. Most of the patient in our series is from rural background and with low socioeconomic status. The incidence of prostatic carcinoma is low in Eastern part of India in comparison to the southern or western part of India or in other developed countries which may be due to lack of awareness regarding the disease and much more consumption of green leafy vegetables in the rural areas than urban peoples. By judicious screening with combination of P S A and D R E clinically localized disease state can be increases resulting in a better chance of cure. Diagnostic yield always increases by TRUS guided prostate biopsy in suspicious cases and always it is advisable to pick up the disease in early stage. Although most patients have more than one risk factor, further studies are needed to confirm the role of modifiable risk factor and preventive agent in its management.

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