# Incidence of Prostate Carcinoma in Prostate Biopsies

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**Nine hundred and six prostatic biopsies were examined histologically at department of Pathology King Edward Medical College , Lahore and Department of Pathology Allama Iqbal Medical College , Lahore. They were comprised of 798(88.08%) TURP specimens, 93(10.26%) open biopsies and 15(1.66%) needle biopsies. Out of these 906 cases, 765(84.44%) were benign and 141 were diagnosed as adenocarcinomas of various degrees of differentiation . This gives an incidence of prostate cancer as 15.56% on histological examination of prostate biopsies. Most of these carcinoma patients were above the age of 55 years (93.6%) with a peak incidence ( 34.75%) between 71 and 80 years. The results were tabulated and compared with other studies on this subject.**

**Key words: Prostate carcinoama, biopsy**

Prostate, an organ of male genital system gains importance as the age advances when the risks of its diseases and disorders are much increased[1]. Frequent pathologies associated with prostate are prostatitis, benign prostatic hyperplasia (BPH) and carcinoma [2]. Prostatic cancer develops in approximately 300,000 men each year worldwide making it the most common cancer in men after lung, stomach and colorectal cancers[3]. In developed countries, prostatic cancer is the third most common malignant disease and second leading killer of men[4]. In addition to overt cancer, an important anatomic form of prostatic cancer is one which is discovered as an incidental finding either at postmortem examination( Latent Carcinoma ) or in a surgical specimen removed for other reasons such as BPH (Incidental Carcinoma )[5].Yet another category of prostate carcinoma is one where the patient shows no symptoms of prostate lesion but shows evidence of metastasis in the form of enlarged lymph nodes or as roentgenographic changes in a bone [6]. Histologically , adenocarcinoma is the most common type of malignant prostate tumours accounting for 98% of prostate cancers[7]. Besides , other varieties are transitional cell carcinoma, squamous cell carcinoma, endometroid carcinoma, sarcomas,lymphomas[8] and neuroendocrine tumours as small cell carcinoma & carcinoid tumours[9].

## Material and Methods

This work includes all the specimens of prostate referred to department of pathology, K.E.M.C,Lahore during the years 1994,95 and 96 and A.I.M.C , Lahore in 1997. Detailed gross examination of these specimens was carried out and they were put in 10% formol saline for fixation. After fixation needle biopsies were processed as such while open prostatectomies were sliced at 3-4mm thickness and TURP specimens were processed as all the fragments upto about 10g. but if in excess another 2g. from each additional 10g. These tissues were processed in an automatic tissue processor through ascending grades of alcohol, cleared in xyline and embedded in paraffin wax. Sections cut at 2-5 um thickness, were mounted on clean glass slides and stained by Haematoxylin and Eosin.

These H & E stained slides were examined by light microscope by at least two histopathologists. The results were then tabulated.

## Results:

This work includes a total of 906 prostatic biopsies comprising of TURP as the most common specimen , 798 cases (88.08%), 93 open prostatectomy specimens (10.26%) and 15 needle biopsie (1.66%) (Table-1) Histological examination of these biopsies reveals (Table-2) that out of a 906 prostatic biopsies , 765 cases (84.44%) were benign ( BPH with or without inflammation) whereas 241 cases (15.56%) were malignant with 10 of them revealing focal adenocarcinoma in association with benign hyperplasia (BPH) . Microscopically all malignant tumours were adenocarcinomas (100%).Regarding the grading of these carcinomas we used Mostofi`s classification(8) as well , moderately and poorly differentiated types. In this study , out of 141 prostate adenocarcinomas, 46(32.63%) were poorly differentiated adenocarcinomas , 54(38.29%) were moderately differentiated and 41 (29.08%) well differentiated adenocarcinomas. Regarding the age incidence ( Table-III), in the present study out of 141 prostate carcinomas , 132 (93.6%) are above the age of 55 years with a peak incidence in age group of 71 to 80 years , 49 patients (34.75%). Only 9 patients (6.38%) are bellow the age of 55 years while non is bellow 40 years.

Table 1. Various types of prostatic biopsies

| Type of biopsy | No. | %age |
|---|---|---|
| TURP | 798 | 88.08 |
| Needle biopsy | 15 | 1.66 |
| Open biopsy | 93 | 10.26 |
| Total | 906 | 100 |

Table 2. Histological diagnosis of prostate biopsies

| Lesion | No. | %age |
|---|---|---|
| BPH | 765 | 84.44 |
| Carcinoma | 141 | 15.56 |
| Total | 906 | 100 |

Table. 3. Age incidence of prostate cancer

| Age( Years) | No. of cases | %age |
|---|---|---|
| >40 | 2 | 1.42 |
| 41-45 | 0 | 00 |
| 46-50 | 1 | 0.71 |
| 51-55 | 6 | 4.26 |
| 56-60 | 19 | 13.48 |
| 61-65 | 21 | 14.89 |
| 66-70 | 20 | 14.18 |
| 71-75 | 21 | 14.89 |
| 76-80 | 28 | 19.86 |
| <80 | 23 | 16.31 |
| Total | 141 | 100 |

## Discussion

Within the past decade or so , there has been a sudden increase of interest in diseases of prostate. This is largely due to the recently perceived high incidence of prostate carcinoma in different geographical and ethnic groups[10] and impressive new information on prostate cancer has been published in the Western as well as other international literature[11]. Prostate cancer develops in approximately 300,000 men each year world wide making it the most common cancer in men after lung[3]. In the present work out of the 906 prostatic specimens, 141(15.56%) were diagnosed as malignant, adenocarcinoma , on histological examination. Various figures are given about the histological diagnosis of carcinoma in prostatic biopsies. Anderson (1990)[6] gave an incidence of 6% to 20% whereas according to Cotran (1999)[5] 15% to 70% of prostatic biopsies at different ages reveal carcinoma on histological examinatioin. These studies are almost consistent with our results. Some other studies give even higher incidence as Breslow (1977)[12] gave a figure of 26% to 37% while Humphrey (1995)[13] and Kojima (1995)[14] described an incidence of 30% .Considering the age incidence most of our patients (93.6%) were above the age of 55 years with a peak incidence (34.75%) in the age group of 71 to 80 years. Not a single patient was bellow the age of 40 while only 6.38% patients were between 40 and 55 years.The other studies also give almost similar trends and describe occurrence of prostate cancer very rarely bellow the age of 40 and thereafter the rate of increase with age is greater than for any other cancer[15] . Less than 1% of the patients having carcinoma of prostate are bellow the age of 50[5] whereas 75% of the patients are between 60 and 79 [16] with an incidence of 29% in the age group of 70 to 79[17]. Regarding the histological type of prostate malignant lesions, in the present work all were found to be adenocarcinoma. Percentage is 100% which is similar to Mosli ,1997[18] whereas Peterson, in 1992[7], describes a little lower incidence of adenocarcinoma which is 98%. In our study grading of these tumours reveals 46 (32.63%) poorly differentiated , 54 (38.29%) moderately differentiated and 41(29.08%) as well differentiated adenocarcinomas. According to Hisham,1997,[11] out of 126 cases of prostatic carcinoma , 45 (35.71%) were poorly differentiated , 34 (26.98%) moderately differentiated and 47(37.31%) well differentiated . So There is only slight discrepancy which may be due to the difference in number of sections taken or personal variations in subjective diagnosis of differentiation.

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