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# PATTERN OF PROSTATIC DISEASE;
## A HISTOPATHOLOGICAL SURVEY

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**ABSTRACT... Objectives:** Analysis of the pattern of prostatic disease in Faisalabad. **Design of Study:** Case series study. **Setting:** Department of Pathology, University Medical and Dental College (UM&DC) and Meezan Laboratory (ML). **Period:** Duration of the study is three years. **Methods and Materials:** All prostatic specimens presenting to the Pathology department at the UM&DC and ML for histopathology were included. **Results:** During this period 540 prostatic biopsies were examined. The mean age of the patients was 67 years. Out of these 467 (86.5%) were benign, 2 (0.3%) had prostatic intraepithelial neoplasia and 71 (13.5%) were malignant. All the cases of malignancies were adenocarcinomas. Most of them were well differentiated (Gleason's score 2-4). The highest incidence of hyperplasia and malignancy occurred between 60-70 years of age. **Conclusions:** The incidence of prostatic cancer is on the rise and measures should be taken for early detection.

**Key words:**Prostate, prostatic disease, prostatic hyperplasia, prostatic neoplasm, incidence, Gleason grading.

## INTRODUCTION

Found at the base of bladder, the prostate gland surrounds the urethra. Enlargement of the prostate will occur with the advancement of age in some males. Nodular hyperplasia, still referred to by the redundant term benign prostatic hyperplasia, is an extremely common disorder in men over age 50[1]. It is characterized by the formation of large, fairly discrete nodules in the periurethral region of the prostate. When sufficiently large, the nodules compress and narrow the urethral canal to cause partial, or sometimes virtually complete, obstruction of the urethra[2].

The latest estimates of global cancer incidence show that prostate cancer (CaP) has become the most common cancer in men, with half a million new cases of cases occur in men aged around 65 years[3].

The Gleason score, the most widespread method of prostate cancer tissue grading used today is the single most important prognostic factor in CaP[4,5,6]. Once the diagnosis of prostate cancer is made, tumor grading, especially the Gleason score, strongly influences decisions regarding options for therapy. The present study was done to see the pattern of prostatic diseases.

## MATERIALS AND METHODS

After getting approval from the Ethical Committee of University of Faisalabad a retrospective study was performed. Record of all specimens of prostatic tissue received for histopathology at the Department of Pathology, UM&DC and ML between January 2007 and December 2009 were included in the study. The biopsies were received in 10% formalin. The specimens were grossed and the measurement and weight of all the specimens was recorded. The tissue was processed and blocks were made. The slides were cut and stained with Haematoxylin and Eosin stains. All the specimens were sub classified into benign and malignant. The type of

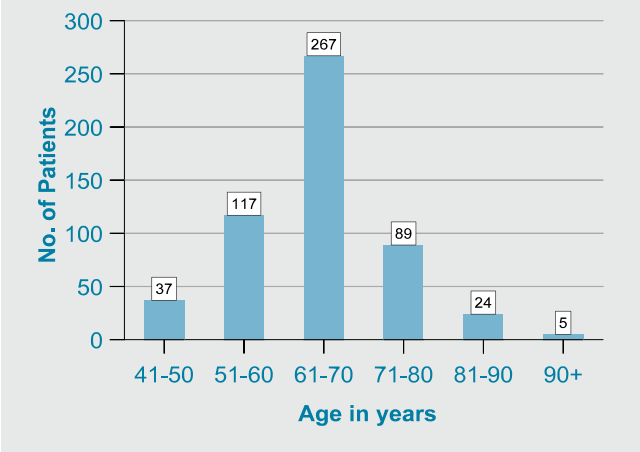
tumor was classified and Gleason's scoring was done. The data was collected and analysed using SPSS version 10.

## RESULTS

A total of 540 specimens were examined during this time. Except for 5, who had undergone open prostatectomy, all the rest had had transurethral resection of the prostate (TURP). Age range of the patients was 40 – 107 with a mean age of 67.05 ± 10.16 (Figure 1). Majority, 49.7%, of patients were in the age range of 61-70 years. The age distribution of benign and malignant lesions is given in figure 2 and figure 3.

Chronic prostatitis, as an accompanying feature, was seen in 40% cases. Acute inflammation was noted in 5 cases only. One case had caseating granulomas in addition to BPH and was thus reported as tuberculous prostatitis (Fig 4). Benign prostatic hyperplasia was seen in 467 cases (Fig. 5). Malignant lesions were seen in 73 patients (Fig 6 & 7). Two of these had prostatic intraepithelial neoplasia and 71 had adenocarcinoma.

**Fig-1. Age distribution of patients**




All specimens were graded according to the criteria laid down by Gleason. Twenty eight of 71 (39.4%) adenocarcinomas were well differentiated (Gleason's score of 2-4), 25 (35.2%) were moderately differentiated (Gleason's score of 5 -7) and 18 (25.4%) were poorly differentiated (Gleason's score of 8-10).

**Fig-2. Age distribution of benign cases**

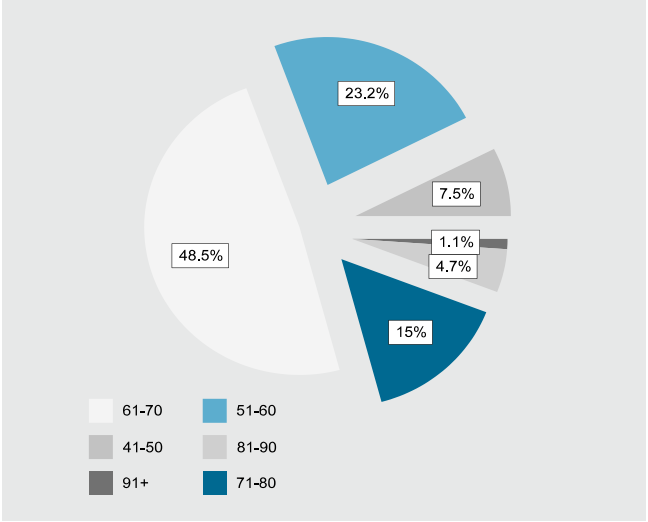
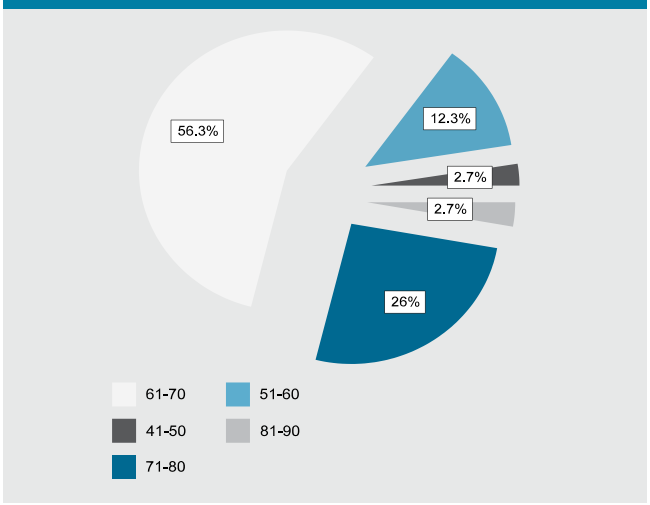



**Fig-3. Age distribution - malignant**




## DISCUSSION

There are three important lesions of prostate. These include inflammations usually as a result of nonspecific infections, nodular hyperplasia usually as a result of benign prostatic hypertrophy and the third is carcinoma[1,2]. All three can cause some degree of enlargement of the prostate gland. As the prostate encircles the normal urethra, any enlargement of the prostate can lead to obstructive symptoms. Hence such patients can present with difficulty in micturation,

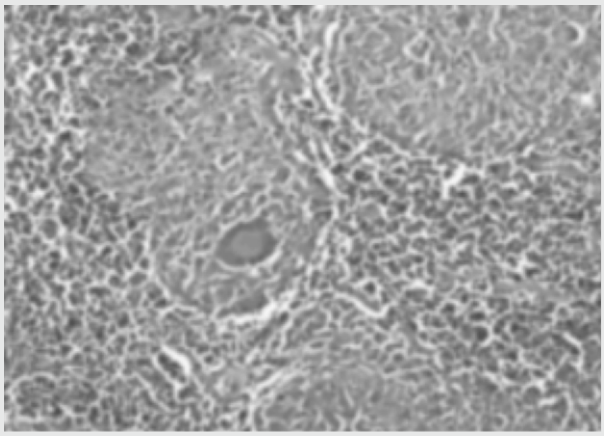


Fig-4. Caseating granulomas in prostate

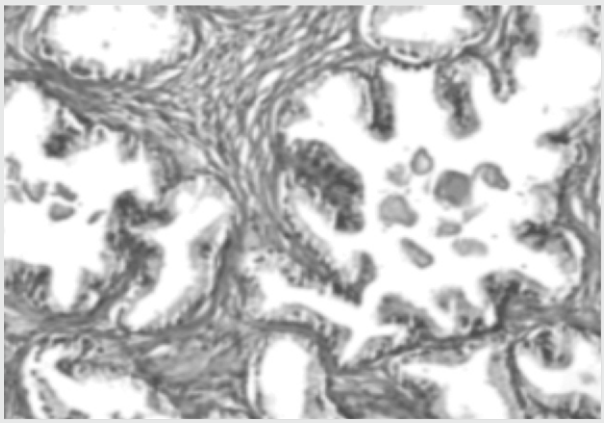


Fig-5. Benign prostatic hyperplasia

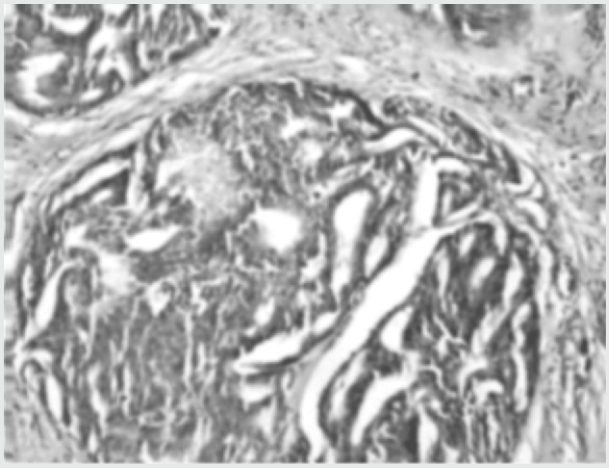


Fig-6. Cribriform pattern of prostatic carcinoma

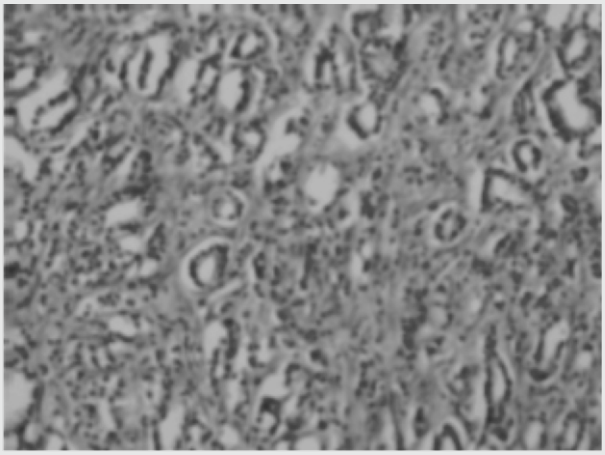


Fig-7. Well differentiated prostatic carcinoma

nocturia, increased frequency of micturation or difficulty of initiating or maintaining the stream of urine[5,6].

The majority of the cases in our study suffered from benign prostatic hyperplasia and microscopically both glandular and fibromuscular hyperplasia was identified. Many of the cases had associated non specific chronic inflammation . In one article from Saudi Arabia chronic prostatitis was observed in 95.1% of all the biopsies reviewed[7].

One case was diagnosed as having tuberculosis of the prostate in addition to hyperplasia Fig .4. Seventy percent of the cases of urogenital tuberculosis demonstrate coincident tuberculosis of the prostate and very small fraction (1%) show primary tuberculosis of the gland[8].

In our study it was seen that benign prostatic hyperplasia is a very common disorder among the men over the age of 60 years and the incidence was 86.8% . This is quite close to the incidence reported from the sultanate of Oman in which the BPH was seen in 88.5 %[11]. An analysis of prostatic disease in Saudi Arabia reveals 90% to be benign with 82.2 % showing hyperplasia[7]. As quoted by another study it is an extremely common disorder above the age of 50 years[3]. The clinical incidence of this disease is only 8% during the fourth decade but reaches 50% in the fifth decade and 75% in the 8th decade[15].

The data from USA in 2006 and Europe in 2008 reveals

that prostatic cancer is the commonest disorder in men[9,10]. In our study 13.2% of the cases were malignant. This is slightly higher percentage as compared to a similar study carried out in Saudi Arabia where the percentage was 10%[2].

Prostatic carcinomas were graded according to the Gleason's scoring. In our study 38.5% of the tumors were well differentiated while 35.2% were moderately differentiated and 25.3% were poorly differentiated. This is in contrast with the results from the Sultanate of Oman[11]. In this 65.5% were poorly differentiated, 24.8% were moderately differentiated and 0.08% were well differentiated. This is indeed important, as an analysis of patients revealed that death from prostatic cancers increases as the Gleason's score increases[12,13,14,15].

## CONCLUSION

Incidence of prostatic carcinoma is lower in the east as compared to the west (although it is greater than that in KSA and Oman). The higher incidence in Western area may be due to early detection by screening programs. Screening protocols and awareness programs need to be introduced and PSA levels should be mandatory in men above 50 years of age.



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