ABSTRACT

Background: Prostate cancer is one of the serious causes of morbidity and mortality in men worldwide. Prostate specific antigen (PSA) is a glycoprotein tumor marker which is expressed by both normal and neoplastic prostate tissue. The total amount of PSA levels in blood is currently relied on as a screening test for prostate cancer. It is hypothesized that higher PSA levels is associated with higher chances of having cancer of the prostate. There is however a controversy on what PSA levels can be relied on during screening of prostate cancer.

Objective: We studied the correlation between prostate specific antigen and histological findings among trucut biopsy specimens of patients at Mbarara Regional Referral Hospital (MRRH).

Methods: A cross-sectional study was conducted on 71 participants that were scheduled for histology examination of a trucut biopsy specimen. Serum samples from eligible participants were collected seven days after clinical assessment including DRE and analyzed for PSA levels. Participant demographics were collected using a data collection tool. Formalin fixed trucut biopsies were processed and analyzed in the pathology laboratory at MRRH for histological findings. Data was analyzed in Stata version 17 and presented in form of frequencies and percentage. T.test was used to compare means of PSA and Spearman's correlation coefficient was used to find the correlation between PSA and histological findings.

Results: The Mean age of participants was 74.20±9.40 years with the majority of participants in the seventh decade of life. The mean PSA level was 59.82ng/mL. On histopathological examination, 36/71 (50.70%) had BPH, 34/71 (47.89%) had prostate adenocarcinoma and only 1/71 (1.41%) had prostate intraepithelial neoplasia (PIN). The largest number of participants with Prostate adenocarcinoma 23/34 (67.65%) had their PSA above 100ng/mL and for BPH, 17/36 (47.22%) had PSA levels between 20.1- 100ng/mL.Majority of cancer patients had Gleason score 8 and majority of patients with Gleason score above 7 had a PSA level above 100ng/mL. The mean serum PSA level in participants with BPH was 55.88 ± 87.90 and 240.53± 167.09 in participants with prostate adenocarcinoma. There was a significant correlation of 0.2409(P.value 0.043) and 0.3033(P.value 0.010) seen in PSA levels less than 4 and from 4.1-20ng/mL respectively for BPH and 0.5955(P.value 0.001) in PSA levels above 100ng/mL for prostate adenocarcinoma.

Conclusion and recommendation: Our study concluded that BPH was the commonest pathology followed by prostate cancer where all the cancers were of adenocarcinoma type. Most BPH cases had PSA levels between 20.1-100ng/mL with a few cases having 400ng/mL and above 100ng/mL

for cancer with most of them having 400ng/mL. There was a significant correlation between PSA levels below 4 up to 20ng/mL for BPH and above 100ng/mL for prostate adenocarcinoma. Though there was a positive correlation, there were some cases with PSA levels very high for BPH and very low for cancer. PSA usage cannot be disregarded or ascertained in this study therefore a larger study should be carried out to ascertain more about this correlation so that other biomarkers can be determined to complement serum PSA. Keywords: Benign prostate hyperplasia, prostate specific antigen, prostate intraepithelial neoplasia, prostate adenocarcinoma.