Original Article

Frequency of cardiovascular Co-morbidities in patients with BPH at urology department CMC/SMBBMU Larkana, Pakistan

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Objective: To determine frequency of cardiovascular comorbidities in patients with benign prostate enlargement (BPH).

Methodology: This cross sectional study was conducted at department of urology CMC/SMBBMU Larkana, from 01-01-2-2019 to 31-12-2019. It included 100 patients who admitted with BPH and hypertension and cardiovascular pathology. Age and duration of BPH symptoms like urgency, frequency) and HTN were recorded. Stratification of age and duration of BPH to see the impact of these on outcome variables were noted.Data were analyze on SPSS version 22.

Results: Age range was 50 – 81 years. Out of 100 patients, 25 had raised blood pressure more than 140 – 90 mmHg, with highest blood pressure of 190 – 120 mmHg. Out of these, 25 patients, when further investigated by cardiologist, 11 had cardiovascular problems like decreased ejection fraction, left ventricular hypertrophy, left ventricular failure, ischemic heart disease and non-significant ECG changes. Among these 11 patients, nine were managed and surgery was done successfully without any unwanted issues. Two patients were with very low ejection fraction of less than 20% were unfit for surgery and hence surgery was not performed.

Conclusion: Most of patients with BPH have risk factors like hypertension and cardiac issues.Such patients should be properly investigated to prevent morbidity or mortality.

Keywords: BPH, hypertension, cardio vascular events.

INTRODUCTION

In elderly male, most common causative factor for lower urinary tract symptoms (LUTS) is enlarged prostate. Its incidence increase with age, reaching to 50% at the age of 60 years and 90% at age 80 years.[1] Nowadays due to increase in overall life expectancy, more aging male present with LUTS.[2] There is possible association of LUTSwith deranged lipid profile along with diabetes mellitus and metabolic syndrome and these induce inflammatory mediators leading to both development and progression of LUTS secondary to enlarged prostate.[3] Another study showed that obesity, deranged lipid profile and advanced age are most important risk factors for development of metabolic syndrome leading to enlarged prostate.[4]

It is also noted that patients with LUTS due to enlarged prostate have cardiovascular diseases like raised blood pressure, recent or past history of myocardial infraction, angina, decreased ejection fraction and changes in electrocardiography.[5]European Association of Urology guidelines suggest that these patients should be thoroughly investigated prior surgery for hypertension, myocardial infraction, drug history, life style, recent history of stroke and coronary artery disease.[4,5] Even though both are different diseases, they share common pathway of risk with advance age.[6,7]

Studies from both the United States (Third National Health and Nutrition Examination Survey [NHANES III]) and the United Kingdom recommend that about 55% to 70% of population above 60 years of age have raised blood pressure.[7] It is also known that enlarged prostate and hypertensive patients are hidden and underdiagnosed.[8,9] From above findings urologists and cardiologists should work together to diagnose and manage these patients timely and properly.[8]To determine frequency of cardiovascular comorbidities in patients with benign prostate enlargement.

METHODOLOGY

This cross sectional study was conducted at department of urology CMC/SMBBMU Larkana, from 01-01-2-2019 to 31-12-2019. Total 100 patients with BPH with hypertension and cardiovascular pathology were included in this study after taking approval from ethical review committee and exclusion criteria followed strictly. Detail history regarding BPH symptoms like frequency, urgency, weak stream, and intermittency, straining during voiding, incomplete emptying of bladder all were used in IPSS proforma with history of symptoms more than six months, also history of urinary

retention and failure of medical therapy for management of BPH. Patients with history of active UTI, diabetes, carcinoma of prostate and chronic renal failure were excluded from this study.

Further patients from age 55 to 80 years were added in our study and history hypertension, recent or old history of cardio vascular events like angina or myocardial infraction were taken and Assessment of hypertension and cardiovascular system was made by consultant cardiologist as routine cardiac fitness.

Patients were labeled hypertensive having blood pressure more than 140-90mmHg on more than two consecutive occasions. A proforma was used to document findings by the resident; it included demographic information like patient's age, duration of symptoms and HTN.

Statistical Analysis: Data were analyzed on SPSS version 22.Stratification of age and duration of BPH to see the impact of these on outcome variables were noted.

RESULTS

Age range was 50 – 81 years. Out of 100 patients, 25 had raised blood pressure more than 140 – 90 mmHg, with highest blood pressure of 190 – 120 mmHg. Out of these 25 hypertensive patients, when further investigated by cardiologist, 11 had cardiovascular problems like decreased ejection fraction, left ventricular hypertrophy, left ventricular failure, ischemic heart disease and non-significant ECG changes.

Out of these 11 patients with cardiovascular issues, nine were managed and surgery was done successfully without any unwanted issues. Two patients had very low ejection fraction of less than 20% and were unfit for surgery and hence surgery was not performed.

DISCUSSION

Our results showed that 25% had raised blood pressure and 11% had cardiovascular problems like decreased ejection fraction, left ventricular hypertrophy, left ventricular failure, ischemic heart disease and non-significant ECG changes. That suggests significant proportion of number with cardiovascular comorbidity. Results of our study are comparable to other studies. The prevalence was seen as 30% and 12% of coronary artery disease patient with enlarged prostate and without enlarged prostate respectively.[8] In our study, enlarged prostate with cardiovascular co morbid in 25%.

In another study by Bruno and Summers on 50 patients with mean age of 73.53 years, out of 50 patients, 27 (54%) died (including) 12 of myocardial infarction and 3 of arteriosclerotic disease.[9]He found that 30% of the patients who died of ischemic heart disease had larger glands (97.3 ± 27.85 g) than the remaining patients (71.24 ± 8.87 g). This was statistically significant ($p < 0.001$).[9] This is comparable to our study, but difference in both studies was that Bruno and Summers study was retrospective in which results was seen after death and diabetes mellitus as risk factor was included, while our study was prospectively in alive patients but drawback was that we have not mentioned diabetes mellitus.[9]

Similar findings were observed by Weisman et al on age group of 65 – 80 years (mean age of cases 72.2 ± 4.2; control 71.6 ± 5.1) in age and risk factor – matched subjects where they found frequency of coronary artery disease as 29% and 9% in cases and control, respectively.[10] In another study by Berger et al on 23 coronary artery disease subjects and 31 normal controls, it was found that prostatic volume was higher (39 cc) in subjects with CAD as compared to controls (24 cc).[11] Results of both studies are comparable to our study but drawback is in our study we did not measure size of prostate in association with increased risk of cardiovascular co morbid.

Inci et al, have mention increased frequency of cardiovascular manifestation is associated with increased volume of prostate and prostatic specific antigen.[12] These both variables are lacking in our study. But from all discussion, it is noted that there is strong association of enlarged prostate with cardiovascular co morbidity. Further studies should be conducted to know its cause and treat or manage it timely to reduce morbidity and mortality sin patients of enlarged prostate due to cardiovascular risk factors.

CONCLUSION

Most of patients with BPH have risk factors like hypertension and cardiac issues.Such patients should be properly investigated to prevent unwanted cardiovascular events.

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