Risk factors of Prostate Enlargement among Patients with History of Lower Urinary Tract Symptoms

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Abstract

Background: Prostate enlargement is defined as increase in size of prostate gland. The diseasemay be presented clinically as lower urinary tract symptoms (LUTS). The disease is increasing with age. There are many risk factors as age, genetic, geographical, obesity, physical activity, diabetes mellitus, hypertension. **Subjects and Method:** A descriptive study was conducted on patients with lower urinary tract symptoms who were attending Tikrit teaching hospital outpatient's clinic during the period from 1st July -1st October2018. The demographic characterestics of patients were obtained according to a questionnaire and the patients were examined clinically to determine if there was enlargement of prostate or not. The diagnoses was confirmed by PR and ultrasound examination.**Results:** The frequency of among sample study was (83%). The cases were more prevalent among the followings:age group 60 years and more(94.3%), positive family history(89.7%),low physical activity (93.4%%) ,hypertensives (87.4%) and with those with erectile dysfunction (94.9%).

Keywords: *Prostate enlargement; Riskfactors; lower urinary tract symptoms(LUTS)*

Introduction

Prostate enlargement means there is an increase in size of the prostate gland.The clinical features includes frequent urination, weak stream, loss of bladder control ,inability to urinate and difficulty in starting urination [(1).] This disease may lead to many complications such as bladder stone ,infection and chronic renal diseases.[(2)]

The causes are unclear [(1).] About 105 million men are affected in the world[(3).]The disease begins after age 40[(1).]and half of males age 50 and over are affected[(2).] and the age after 80 years about 90% of males are affected[(1).] and reach in 2010 (6%) of population[(4,5,6).]

Prostate enlargement rises markedly with increased age (5-7) and may reach in male freely asymptomatic with age46 years ,the risk of developing the disease in the next 30 years, may reach 45% [(8).]The older age will be at risk to be affected with clinical features ofthe disease[(9-11)]

There are other risk factors other than aging which are positive family history [(12-14),]obesity [(15,16),]diabetes mellites type 2. hypertension[(17)],not enough exercise[(18,19),]erectile dysfunction[(1).]Eating red meat,fat,dairy product and starch increase risk while eating vegetables,fruits decrease the risk[(19, 20)]

Some drugs like calcium channel blockers ,anticholinergics and pseudoephedrine may worsen symptoms.[(2)]

Diagnosis is depend on clinical bases which based on lower urinary tract symptoms ,digital rectal examination then Ultrasound.[(2)]

Patients and Methods

A descriptive study was conducted on adults attending urology outpatient clinic in Tikrit general hospital. The study started from 1st July -1st October2018. The patients were diagnosed clinically by the specialist and sent for

further investigation as ultrasound. The sample study individuals demographic information was obtained according to structured- designed questionnaire and by direct interview. Body weight, height, were measured in addition to obtain from patients other investigation which help in relation with common risk factors.

Statistical Analysis: Frequencies, per cent and Chi-square test was used to assess association. Statistical analysis at p-value < 0.05 was considered significant.

Results

It has been revealed that the frequency of prostate enlargement among study sample was about (83%)(Fig.1).

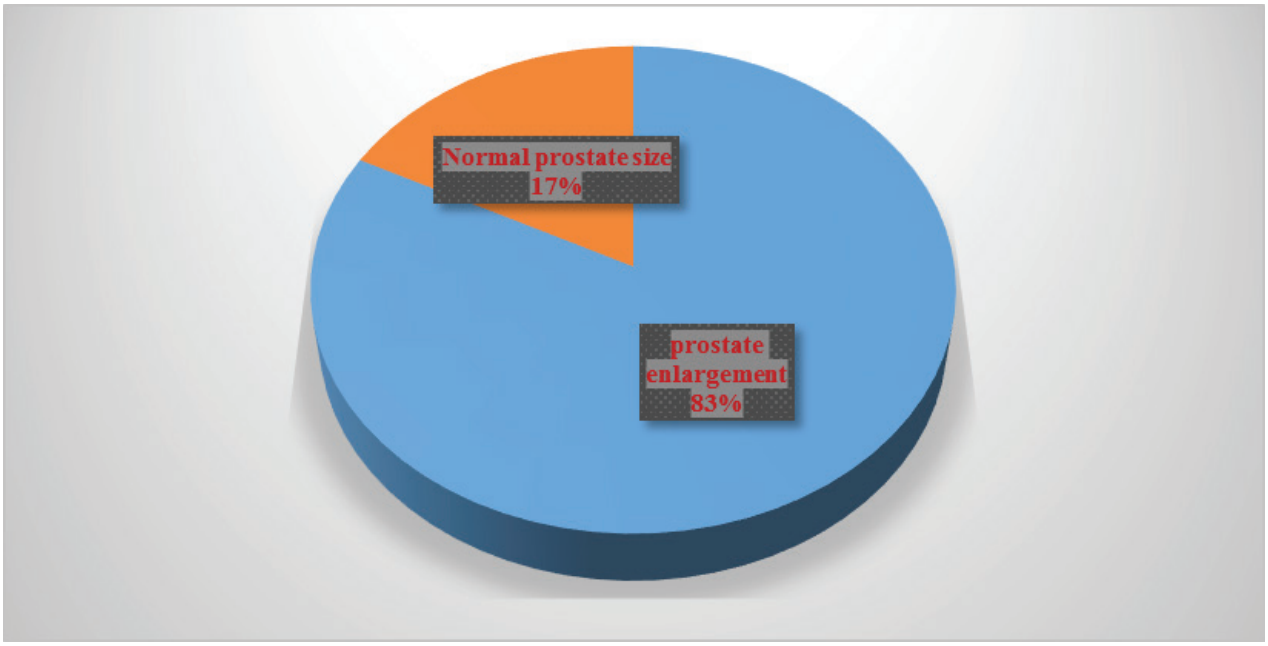

Fig. 1: Distribution of sample study according to presence of prostate enlargement

The frequency of prostate enlargement was progressively increased with age group, the highest frequency was among age group 60 years and more (94.3%) followed by age group 50-60 years (87.1%) and the less frequency among age group less than 50 years (44.4%) with significant difference.

Regarding the residence factor, there was no statically difference between urban and rural area patients even there was slightly high frequency among rural area(84.7%). There frequency of prostate enlargement cases was more frequent among the patient with a positive family history (89.7%) with a significant difference. Table (1)

Table(1)Distribution of cases according to certain demographic characterestics.

		Normal size prostate	Enlarged prostate	Total	Chi square test
Age groups	Less than 50 years	10 (55.6%	8 (44.4%)	18 (100%)	*P*-value is 0.000013. Significant at *P < 0.05*
	50-59 years	8 (12.9%)	54 (87.1%)	62 (100%)	
	60 years and more	2 (5.7%)	33 (94.3%)	35 (100%)	
	Total	20 (37%)	95 (83%)	115 (100%)	
Residence	Urban	11 (19.6%)	45 (80.4%)	56 (100%)	*P*-value is 0.534855. Not Significant at *P < 0.05*
	Rural	9 (15.3%)	50 (84.7%)	59 (100%)	
	Total	20 (37%)	95 (83%)	115 (100%)	
Family history	Positive	9 (10.3%)	78 (89.7%)	87 (100%)	*P*-value is 0.00044. Significant at *P < 0.05*
	Negative	11 (39.3%)	17 (60.7%)	28 (100%)	
	Total	20 (37%)	95 (83%)	115 (100%)	

The frequency of cases with prostate enlargement was higher among patents with low physical activity (93.4%) than those with high physical activity (62.5%), the difference was highly significant.

Regarding the presence of obesity, prostate enlargement cases were higher among obese than nonobese patient (83.3%, 82.4% respectively), but there was no significant difference.

Hypertensive patients had more frequent cases than normotensive(87.4%, 60% respectively) and there was a significant difference).

Regarding presence of diabetes mellitus, prostate enlargement was more frequent among diabetics than nondiabetics (83.3%, 82.4% respectively) with no significant difference.

It has been reported that prostate enlargement cases were more frequent among smokers than nonsmokers' cases (85.2%, 79.6% respectively) but there was no significant difference.

There was a significant relation between erectile dysfunction and presence of prostate enlargement. The frequency of prostate enlargement cases was higher among patients with erectile dysfunction than those without erectile dysfunction (94.9%, 69.6% respectively). Table (2**).**

Table (2) Distribution of cases according to certain risk factors.

		Normal prostate	Enlarged prostate	Total	Chi square test
Physical activity	Low	5 (6.7%)	70 (93.4%)	75 (100%)	P-value is 0.000033. Significant at P < 0.05
	High	15 (37.5%)	25 (62.5%)	40 (100%)	
	Total	20 (37%)	95 (83%)	115 (100%)	
Obesity	Normal	16 (17.6%)	75 (82.4%)	91 (100%)	P-value is 0.916148. Not significant at P < 0.05
	Obese	4 (16.7%)	20 (83.3%)	24 (100%)	
	Total	20 (37%)	95 (83%)	115 (100%)	
Hypertension	Yes	12 (12.6%)	83 (87.4%)	95 (100%)	P-value is 0.003336. Significant at P < 0.05
	No	8 (40%)	12 (60%)	20 (100%)	
	Total	20 (37%)	95 (83%)	115 (100%)	
Diabetes mellitus	Yes	7 (16.7%)	35 (83.3%)	42 (100%)	P-value is 0.87642. Not significant at P < 0.05
	No	13 (17.8%)	60 (82.2%)	73 (100%)	
	Total	20 (37%)	95 (83%)	115 (100%)	
Smoking	Yes	9 (14.8%)	52 (85.2%)	61 (100%)	P-value is 0.427768. Not significant at P < 0.05
	No	11 (20.4%)	43 (79.6%)	54 (100%)	
	Total	20 (37%)	95 (83%)	115 (100%)	
Erectile dysfunction	Yes	3 (5.1%)	56 (94.9%)	59 (100%)	P-value is 0.000352. Significant at P < 0.05
	No	17 (30.4%)	39 (69.6%)	56 (100%)	
	Total	20 (37%)	95 (83%)	115 (100%)	

Discussion

The frequency of prostate enlargement in the current study was about (83%). This frequency is higher to that reported in general population ,the prevalence of 8%, 50%, and 80% in the 4th, 6th, and 9th decades of life, respectively(9-11). This result may be attributed to that our study result was obtained from the patients with lower urinary tract symptoms which is considered as a risk factor of prostate enlargements[21-24]

The prostate enlargement cases in this study was increasing with increasing age and it was with high frequency among age group (60 years and more) (94.3%) followed by age(50-59)years(87.1%) with significant difference. This results were similar to studies report that prostate enlargement increasing positively with increasedage(25). Many researchers revealed that older age is a risk factor of prostate enlargement[9-11,26-29].

According to residence there were slightly high frequency among rural (84.7%)than urban (80.4%) residence but without significant difference.

There was highly significant difference in the current study between those with positive family history of prostate enlargement and those without for occurrence of the disease . The disease was high frequent among those with positive family history (89.7%) than those without(60.7%). This result was similar to that documented by others .[12,14,30,31]

Prostate enlargement cases in our study were more frequent among patients with low physical activity (93.4%) than those with high physical activity (62.5%) with significant difference. This results were similar to that reported by other in which they revealed that moderate to vigorous physical activity was a protective factors from the disease[19, 18]

It has been found in the current study that there were no significant difference between obese and non-obese and between diabetics and non-diabetics even that obesity and diabetes mellites are considered as a risk factors of prostate enlargements[15,16].

Regarding hypertension disease it was documented that prostate enlargement cases were more prevalent among hypertensive patients (87.4%) than non-hypertensive(60%) with significant difference. This result is going to results which consider hypertension is a risk factor of the disease[17].

Regarding smoking habit ,the disease was more frequent among smoker than nonsmoker with no significant difference. This result is with agreement of other studies[32].Zheeno found that most of patients with benign prostatic enlargement were nonsmokers.

Regarding erectile dysfunction , it has been reported in the current study that prostate enlargement cases were more frequent among patients with erectile dysfunction (94.9%) than those with normal erectile function(69.6%) with significant difference. This evidence support the relation between erectile dysfunction and prostate enlargements[21-24]

Conclusions The current study revealed that there are a significant association between hyperchloremia and hypertension, cardiac diseases and diabetes mellites.

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Ethical Clearance: Protocol approval and the Ethical Committee Approval were achieved from the College of Medicine/Tikrit University for the protocol of the study.

Conflict of Interest: The authors declare that there are no conflicts of interest.

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