Prostate Diseases in the Middle East, a Clinical and Pathological Review at King Abdullah University Hospital - Jordan

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Abstract

Objective: Prostate cancer is the most commonly diagnosed cancer in western countries; its incidence/prevalence depends on many factors such as racial differences and diagnostic efforts. Benign prostatic hyperplasia prevalence on the other hand steadily increases with aging. We set out to review our institutional data as characterization of these two entities in the middle-east is warranted.

Methods: This is a retrospective frequency study, the study population included men who attended the urology clinic for prostate related complaints, divided into a biopsy group (who underwent prostate biopsy) and non-biopsy group defined as patients evaluate/ treated for benign prostate conditions and has no indication to perform prostate biopsy. We assessed the rates of cancer, benign prostate hyperplasia (BPH), prostate intra-epithelial neoplasia, diabetes, prostatitis, and overactive bladder.

Results: 2,966 patients included, mean age was 68.7 years. Benign prostate hyperplasia (BPH) found in 56%, Diabetes (DM) in 26.5%, overactive bladder (OAB) in 15.1%. Among 272 patients who underwent prostate biopsy: 28.7% had cancer (PCa, statistically significant by age, P=0.042). In the non-biopsy group (n=2,693), BPH found in 54.2 % and, Overall total Prostate Specific Antigen (tPSA) mean was 6.4 ng/ml, significantly higher with ageing, in the biopsy group (11.96 ng/ml), in PCa (15.6 ng/ml), BPH group 4.58 ng/ml, in patients who underwent TURP vs. medical therapy (11.9 Vs 3.11, as well as in OAB, abnormal digital rectal examination, lower in diabetics compared to their counterparts (P<0.001 for all these comparisons).

Conclusions: Our report comes in agreement with international literature regarding the clinical characters of BPH; OAB may cause an increase in the PSA values. Regarding prostate cancer, the percentage of patients who needed prostate biopsy and rates of biopsy-proven cancers were less than those reported in the literature with probably more aggressive behavior, more studies and data are needed to validate these findings.

Keywords: Prostate Diseas, Middle East, King Abdullah University Hospital.

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Introduction

The characteristics of prostate diseases in the Middle East are not well described, as national cancer registries are dependent on reporting by institutions. Both benign prostate hyperplasia (BPH) and prostate cancer rates are increasing due to the aging population and

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improved awareness among patients and physicians. Prostate cancer is increasingly detected due to prostate specific antigen (PSA) testing, as many institutional protocols now include PSA testing as part of the initial evaluation of males over age 50.

According to the Jordan Cancer Registry (JCR) report published in 2010, 218 new prostate cancer cases were diagnosed, accounting for 9.4% of all cancers detected in adult males and ranking third in prevalence after lung and colon cancers. The Age Standardized Incidence Rate (ASR) was 14.6/100,000, which is relatively higher than that reported in 2009 (11.5/100,000). Since 1996, new prostate cancer diagnoses have increased steadily, from 89 new cases detected in 1996 to 218 new cases diagnosed in 2010i; however, whether this change reflects a true increase in cancer incidence or population growth versus increased PSA testing has not yet been established.

In an analysis of GLOBOCAN 2008 statistics, Ferlay et al. concluded that prostate cancer is the second most common cause of cancer and the sixth leading cause of cancer death among men worldwide, with an estimated 899,000 new cases and 258,000 new deaths in 2008[2].

The worldwide prostate cancer burden is further expected to grow to 1.7 million new cases and 499,000 new deaths by 2030 simply due to the growth and aging of the global population[3]. High-income countries have approximately 10 times the prostate cancer rate of lower-middle-income countries, which may indicate that the actual differences in incidence and prevalence are a reflection of screening effortsii. Although the introduction of PSA testing in the late 1980s has markedly changed prostate cancer epidemiology, clinical evaluation and PSA testing cannot accurately differentiate malignant from benign prostatic conditions, as only 20–30% of initial biopsies are positive for cancer[3].

In this report, Jordan was classified as having age-standardized prostate cancer incidence rates in the range of 11.8–20.4/100,000 and mortality rates in the range of 7.5–11.5/100,000 (for biopsy derived CaP)[3]. A population-based cross-sectional study by Arafa et al. found the incidence of prostate cancer among Arabs to be lower than those observed in North America and Europe[4].

Prostate disease diagnosis paradigms differ according to the suspected condition. Benign prostate hyperplasia (BPH) is diagnosed clinically like the International Prostate Score (IPSS), digital rectal exam (DRE), and uroflowmetry, while prostate cancer can only be definitively diagnosed by histological examination of prostate tissues obtained at biopsy[5]. Prostate cancer and BPH share characteristics including increasing incidence with age, androgen dependence, and responsiveness to androgen deprivation therapy[6], and 33% of men have BPH with coexisting prostate cancer[7].

This cross-sectional study aimed to estimate the frequency of common pathologies affecting prostate disease at a major secondary university hospital in Jordan.

MATERIAL AND METHODS

This is a retrospective study; the study material is the records of males who presented to the urology clinic at King Abdullah University Hospital (KAUH) between; 2007–2010. Basic demographic data were collected from KAUH databases (electronic and physical files), and missing data were completed by phone calls and tracking patients at their subsequent visits.

The sample consisted of 2,966 male patients presenting with symptoms suggestive of prostate diseases, and the cohort was divided according to clinical and pathological data ***(FIGURE 1)***. The biopsy group (n=272) was defined as men who underwent trans-rectal prostate biopsy (TRUS biopsy) to rule out prostate cancer indicated by the institutional protocol; abnormal PSA, abnormal DRE, suspected prostate cancer by ultrasonography, and random prostate biopsy because of unspecified distal metastasis, upon the discretion of the treating urologist. The no-biopsy group (n=2694) consisted of patients who were evaluated and treated for benign prostate conditions, and was further subdivided into BPH (n=1461) and non-BPH subgroups (n=1233). According to pathological findings, 78/272 patients in the biopsy group (28.67%) were diagnosed with cancer, and an additional 27 patients from the no-biopsy group were diagnosed with prostate cancer by means other than TRUS biopsy (either trans-urethral resection of the prostate [TURP] or assessment of metastatic tissue).

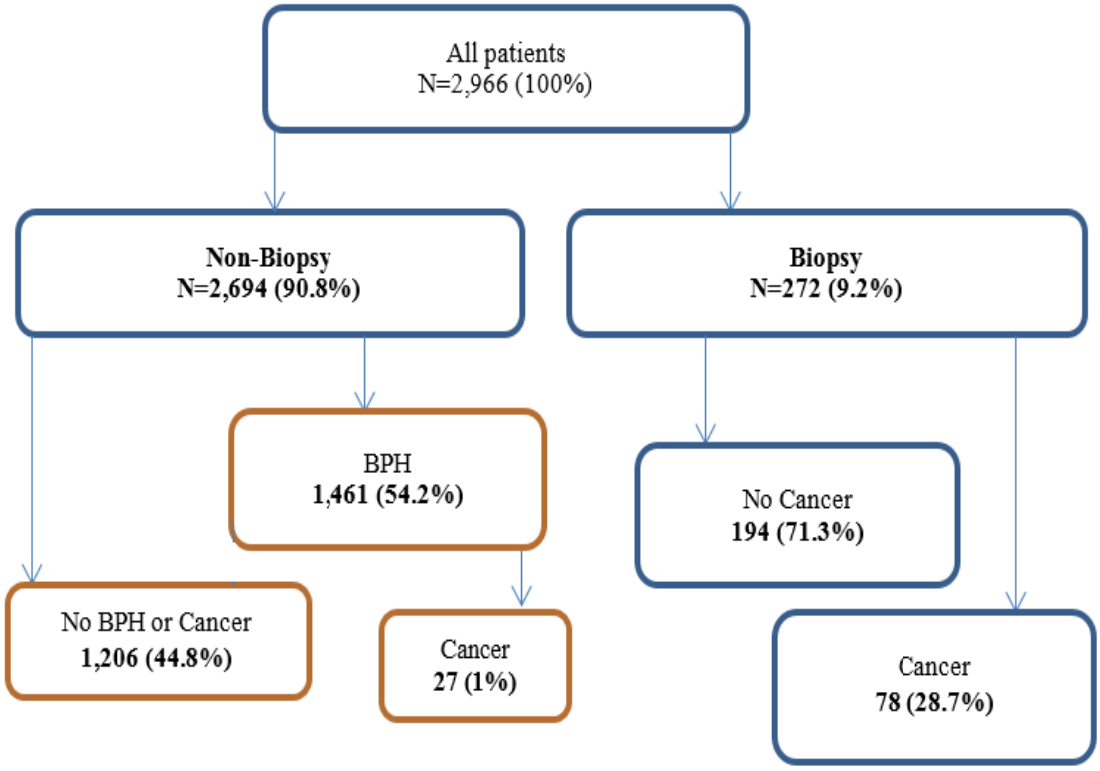

Figure 1: Distribution of participants divided according to study methodology

Variables considered significant for analysis were biopsy, cancer, BPH, diabetes mellitus (DM), overactive bladder (OAB), prostate intra-epithelial neoplasia (PIN), and prostatitis. Prostate volume estimation was excluded from the analysis because of inconsistencies in reporting, since it was determined mainly by DRE, while more accurate methods such as ultrasonography were used for a select group of patients. The

study was approved by the Institutional Review Board of Jordan University Science and technology.

Data are presented as percentages and means ± standard deviation as appropriate. Statistical tests (according to the nature of each variable) included chi-square and t-test. Descriptive measures, correlations, and tests of significance were used to test the associations between selected clinical variables. P values < 0.05 were considered statistically significant, We utilized SPSS software to perform statistical analyses.

According to the diagnostic paradigm, Two groups of patients were identified: (1) the biopsy group, a total of 272 patients (9.2% of the total study population) among whom prostate cancer was reported in 78 (28.7% of the biopsy group) and (2) the non-biopsy group, a total of 2694 patients (91% of the cohort), more than half of whom (n=1,461 subject, 54.2%) were diagnosed with BPH (Figure 1).

Table 1. Study groups tabulated presented with significant variables

Group/variable	Number	Mean Age	tPSA, ng/ml (mean)	DM	OAB
Biopsy group	**272**	**71.7**	**11.96**	**61**	**60**
Cancer	**78**	**73.5**	**15.6**	**21**	**24**
No cancer	**194**	**71.0**	**3.40**	**40**	**36**
No-biopsy group	**2694**	**68.4**	**2.99**	**724**	**387**
A. BPH	**1461**	**70.6**	**4.58**	**454**	**320**
1. Medical therapy	**1182**	**69.6**	**3.1**	**366**	**191**
2. TURP	**209**	**75.7**	**11.9**	**68**	**95**
3. Open prostatectomy	**18**	**76.7**	**8.3**	**3**	**8**
B. No BPH	**1233**	**65.8**	**4.7**	**270**	**67**
C. Cancer	**27**	**77.8**	**66.4**	**3**	**13**
Total	**2699**	**68.7**	**6.4**	**785**	**447**

RESULTS

Overall, a total of 2,966 records were retrospectively reviewed, representing male patients who attended the Urology clinical at King Abdulla University Hospital in Jordan, in the period from 2007 to 2010 (inclusive). **Table 1** presents basic information of all participants divided according to study methodology; Patients' mean age was 68.7 years. About two thirds of patients were over 66 years old (63.7%), 26.5% had DM, 15.1% had OAB, and 56.3% had BPH. Among patients for whom pathological specimens were available (n=600), the number of Prostatic Intra-epithelial Neoplasia (PIN) cases (n=12) was too small to be analyzed, but more than half (56%) had pathological findings of prostatitis. Overall the study participants demonstrated the following distribution of clinical diagnoses: 105 (3.5%) patients had prostate cancer (78 diagnosed by biopsy and 27 by other means) and 1669 had BPH, accounting for 56.3% of the entire cohort. Of

the 272 patients who had a biopsy, 208 had histological evidence of BPH.

The Biopsy Group (table 2): A total of 272 (10.1%) were evaluated, among which, 28.7% of patients were diagnosed with PCa (n=78). The majority of biopsy patients had BPH (76.5%, n=208), 49.3% (n=134) and 22.1% (n=60) had prostatitis and OAB, respectively, and 22.4% (n=61) had DM. Mean age of men diagnosed with prostate cancer was 71.7 years, PCa diagnosis within this group was statistically significant by age (P=0.042), PIN (P<0.001), Prostatitis (P<0.001), OAB (P=0.023) and BPH (P<0.001), as shown in Table 1.

Table 2. Biopsy group Distribution and Clinical Characteristics

Variable	Grand totals		Biopsy					
			Total	PCa		Non-PCa		*P*
	n	%		n	%	n	%	*value*
Age (years)								
26 - 45	**126**	**4.3%**	**0**	**0**	**0.0%**	**0**	**0.0%**	***0.042***
46 - 65	**951**	**32.1%**	**66**	**13**	**19.7%**	**53**	**80.3%**	
≥ 66	**1,886**	**63.7%**	**206**	**65**	**31.6%**	**141**	**68.4%**	
Total	***2,963***	***100.0%***	***272***	***78***	***28.7%***	***194***	***71.3%***	
DM								
Yes	**785**	**26.5%**	**61**	**21**	**34.4%**	**40**	**65.6%**	***0.167***
No	**2,181**	**73.5%**	**211**	**57**	**27.0%**	**154**	**73.0%**	
Total	***2,966***	***100.0%***	***272***	***78***	***28.7%***	***194***	***71.3%***	
PIN								
Yes	**12**	**2.0%**	**7**	**5**	**71.4%**	**2**	**28.6%**	***0.023***
No	**588**	**98.0%**	**263**	**73**	**27.8%**	**190**	**72.2%**	
Total	***600***	***100.0%***	***270***	***78***	***28.9%***	***192***	***71.1%***	
Prostatitis								
Yes	**336**	**56.0%**	**134**	**13**	**9.7%**	**121**	**90.3%**	***<0.001***
No	**264**	**44.0%**	**136**	**65**	**47.8%**	**71**	**52.2%**	
Total	***600***	***100.0%***	***270***	***78***	***28.9%***	***192***	***71.1%***	
OAB								
Yes	**447**	**15.1%**	**60**	**24**	**40.0%**	**36**	**60.0%**	***0.023***
No	**2,518**	**84.9%**	**212**	**54**	**25.5%**	**158**	**74.5%**	
Total	***2,965***	***100.0%***	***272***	***78***	***28.7%***	***194***	***71.3%***	
BPH								
Yes	**1,669**	**56.3%**	**208**	**45**	**21.6%**	**163**	**78.4%**	***<0.001***
No	**1,297**	**43.7%**	**64**	**33**	**51.6%**	**31**	**48.4%**	
Total	***2,966***	***100.0%***	***272***	***78***	***28.7%***	***194***	***71.3%***	

The non-biopsy group (Table 3): (n=2,693) 1% had a PCa diagnosis (n= 27 cases). BPH and OAB were reported in 1,461 (54.2 %) and 387 (14.4%) of non-biopsy

patients, respectively, while 26.8% (n=724) had DM. PCa diagnosis was statistically significant by age group (P=0.005), DM (P=0.043), PIN (P=0.004), Prostatitis (P<0.001), and OAB (P=0.001). Among BPH patients, (n=1,461, 54.2%), 1,182 (43.8%) were treated medically and 209 (7.8%) underwent TURP. Among the Non-PBH patients (n=1,260), 27 (2.1%) were treated for PCa as their diagnosis was based on prostate tissue evaluation other than TRUS biopsy.

Table 3. Non-biopsy group: Distribution and Clinical Characteristics

Variable	Grand total		Non-Biopsy					
			Total	PCa		Non-PCa		*P value*
	n	%		n	%	n	%	
Age (years)								
26 - 45	**126**	**4.3%**	**126**	**0**	**0.0%**	**126**	**100.0%**	***0.005***
46 - 65	**951**	**32.1%**	**885**	**2**	**0.2%**	**883**	**99.8%**	
≥ 66	**1,886**	**63.7%**	**1,680**	**25**	**1.5%**	**1,655**	**98.5%**	
Total	***2,963***	***100.0%***	***2,691***	***27***	***1.0%***	***2,664***	***99.0%***	
DM								
Yes	**785**	**26.5%**	**724**	**3**	**0.4%**	**721**	**99.6%**	***0.043***
No	**2,181**	**73.5%**	**1,970**	**24**	**1.2%**	**1,946**	**98.8%**	
Total	***2,966***	***100.0%***	***2,694***	***27***	***1.0%***	***2,667***	***99.0%***	
PIN								
Yes	**12**	**2.0%**	**5**	**3**	**60.0%**	**2**	**40.0%**	***0.004***
No	**588**	**98.0%**	**325**	**24**	**7.4%**	**301**	**92.6%**	
Total	***600***	***100.0%***	***330***	***27***	***8.2%***	***303***	***91.8%***	
Prostatitis								
Yes	**336**	**56.0%**	**202**	**6**	**3.0%**	**196**	**97.0%**	***<0.001***
No	**264**	**44.0%**	**128**	**21**	**16.4%**	**107**	**83.6%**	
Total	***600***	***100.0%***	***330***	***27***	***8.2%***	***303***	***91.8%***	
OAB								
Yes	**447**	**15.1%**	**387**	**13**	**3.4%**	**374**	**96.6%**	***0.001***
No	**2,518**	**84.9%**	**2,306**	**14**	**0.6%**	**2,292**	**99.4%**	
Total	***2,965***	***100.0%***	***2,693***	***27***	***1.0%***	***2,666***	***99.0%***	
BPH								
Yes	**1,669**	**56.3%**	**1,461**	**18**	**1.2%**	**1,443**	**98.8%**	***0.133***
No	**1,297**	**43.7%**	**1,233**	**9**	**0.7%**	**1,224**	**99.3%**	
Total	***2,966***	***100.0%***	***2,694***	***27***	***1.0%***	***2,667***	***99.0%***	

Regarding PSA: Overall mean tPSA was 6.4 ng/ml; 1.261 ng/ml for patients 45 years and younger, 2.587 ng/ml for patients between 46–65 years, and 4.575 ng/ml for patients 66 years old and older. Mean tPSA was significantly associated with age (P<0.001) and significantly higher among the biopsy group (11.96 ng/ml) compared to the non-

biopsy group (2.99 ng/ml) (P<0.001). Biopsy confirmed (positive) PCa diagnoses had significantly higher mean tPSA (15.6 ng/ml) compared to negative PCa patients (3.41 ng/ml) (P<0.001). In the non-biopsy group, significant differences in the mean tPSA among BPH cases (4.58 ng/ml) and non-BPH cases (2.77 ng/ml) were detected (P<0.001). Among BPH patients who underwent medical therapy (n=1,182) and TURP (n=209), mean tPSA was 3.11 and 11.9 ng/ml, respectively (P<0.001). PCa diagnosed cases in the non-biopsy group had a mean (SD) tPSA of 66.4 ng/ml, which was greater than that of the biopsy confirmed PCa (15.6 ng/ml). Patients with OAB and those without DM had significantly higher mean tPSA compared to their counterparts (P<0.001 for both comparisons).

Table 4. Mean tPSA according to clinical diagnosis and characteristics

Variable	Mean (ng/ml)	SD	*P value*
Age group (year)			
26–45	1.26	0.23	<0.001
46–65	2.59	0.23	
≥66	4.57	0.15	
Group			
Biopsy group	11.96	7.84	<0.001
Non-biopsy group	2.99	8.16	
PCa diagnosis			<0.001
positive	15.6	19.85	
Negative	3.41	7.15	
PBH			<0.001
Positive	4.58	9.01	
Negative	2.77	6.74	
PIN			
Yes	13.09	17.45	0.224
No	8.51	12.22	
DM			
Diabetic	2.86	6.12	<0.001
Non-diabetic	4.13	8.74	
OAB			
Yes	5.18	10.52	<0.001
No	3.55	7.63	
Prostatitis			
Yes	8.07	10.39	0.235
No	9.29	14.51	

In the biopsy group, a total of 32 patients were diagnosed with abnormal DRE and showed an elevated tPSA mean (7.93 ng/ml) compared to 3.74ng/ml in patients with normal DRE.

The 272 men who underwent TRUS biopsy had a mean tPSA of 11.9 ng/ml compared to 2.99 ng/ml among patients who did not undergo a TRUS biopsy. The same trend was observed for PIN patients as a whole, which had a mean tPSA of 13.08, ng/ml, compared to the overall mean level of: 8.59ng/ml and 8.51ng/ml for non-PIN patients. Diabetic patients had a lower mean for tPSA than non-diabetic patients (2.85 ng/ml vs.4.12 ng/ml, respectively). Patients with OAB had a mean tPSA of 5.18 ng/ml compared to 3.54 ng/ml among non-OAB patients. Patients with pathological evidence of prostatitis and those who did not demonstrated no difference in their means tPSA levels, with both very similar to the overall mean of 8.59ng/ml.

Patients who underwent TURP had an increased mean tPSA of 5.41ng/ml; this can be explained by higher prostate volume and/or the presence of lower urinary tract symptoms in this group, this is well-known confounding factors which may adversely affect the predictive value of PSA. The abovementioned mean tPSA levels were all significantly higher in the affected groups except for those with prostatitis and PIN, which had P values of 0.235 and 0.224, respectively.

Diabetes was found in 785 (26.5%) of the whole cohort: 61 patients (22.4%) in the biopsy group, and 724 patients (26.9%) in the no-biopsy group. Prostate cancer was diagnosed in 21/61 (34.4%) of diabetic patients and 57 (27.0%) of non-diabetic patients, 13 patients (9.7%) with prostatitis and 65/136 patients (47.8%) with no prostatitis, and 24 patients (40%) with OAB and 54 patients (25.5%) with no OAB. Of 208 patients in the biopsy group who had BPH, 45 (21.6%) had cancer, while of 64 biopsy patients with no BPH, 33 (51.6%) had cancer.

A tendency toward increased prostate cancer incidence was observed among older patients, as suggested in previous studies[8], our study was consistent with established statistics and relationships. Prostate cancer also demonstrated significant relationships with PSA, DRE, PIN, prostatitis, and OAB. The numbers of new cases of prostate cancer from 2007 to 2010 were uniform: 30 in 2007, 25 in 2008, 21 in 2009, and 29 in 2010.

DISCUSSION

Our numbers came in agreement with the international literature regarding the high prevalence of BPH; benign prostatic hyperplasia is considered the fourth most common diagnosis in older men. Its prevalence increases with age, with more than 50% of those over 50 years old affected, and 90% of men thought to have an enlarged prostate by the age of 80 yearsiii. However, thus far there is no published data on the prevalence of BPH in Jordan due to a lack of registries and inconsistencies in diagnosis paradigms.

According to the Jordan Cancer Registry (JCR) report published in 2010, the estimated population of Jordan in 2010 reached 6,113,900, including 3,146,765 (51%) males and 2,959,425 females. A total of 413,770 (13.2%) Jordanian males were 45 years and older, and 27.8% live in northern Jordan, indicating that the population base of our study is approximately 872,000 males, of whom 115,104 were above the age of 45 years[1].

Prostate Intraepithelial Neoplasia (PIN) is a distinct pathological finding, the prevalence of PIN diagnosed by TRUS-biopsy is widely

variably and is affected by the expertise of the pathologist, the clinical value of PIN is controversial, it may predict the later development of prostate cancer though there is no consensus among authorities to consider it as a precancerous lesion.

The utilization of PSA for diagnosing benign and malignant conditions of the prostate is beyond the scope of this article; nevertheless, the 2010 American Urology Association guidelines on the management of BPH indicated that PSA should be part of the initial evaluation of patients with lower urinary tract symptoms. Moreover, PSA is one of the parameters used to guide treatment options, since a PSA of 1.5ng/ml or higher predicts clinical progression of BPH[10]. Cvitkovic et al. stated that PSA is the most useful biomarker for the detection and the monitoring of prostate cancer and BPH progression[11]. Shen and Abate-Shen stated that PSA testing has revolutionized the diagnosis of prostate cancer, since it is now possible to detect most prostate tumors at early stages[12]. In Asia, a 2009 study by Lin et al. confirmed that serum PSA is directly correlated with age, and offered more efficient PSA reference values for prostate cancer screening tests in Taiwanese men[13]. Several publications have concluded that there is no threshold for PSA with both high sensitivity and high specificity for monitoring healthy men for prostate cancer, but rather a continuum of prostate cancer risk at all values of PSA[14]. The PSA measurements in this cohort will be the subject of a separate analysis, as we concluded that more investigation was needed to establish PSA standard values in Jordan according to receiver operating characteristic curves extracted from the same database.

We considered DM an important factor for several reasons, including its prevalence in Jordan and effect of diabetes on the bladder and its compensation ability, in addition to its proposed effect on prostate cancer incidence. A meta-analysis by Long et al. that included 7 studies (four cohort and three case-control studies) with a total of 1,751,274 patients indicated that patients with diabetes had a significant increase in risk of developing prostate cancer using both adjusted and unadjusted estimates[15].

Over-Active Bladder (OAB) is not a well-described cause of Prostate Specific Antigen values which can increase in non-cancer conditions, any inflammation of the prostate gland can elevate these values adding to the overlap between benign and malignant conditions, Acute urinary retention is also a known cause of PSA elevation thus it is advisable to postpone PSA assessment to at least 3 weeks after relief of obstruction. We found that the sub-group of patients with Over-active bladder have significantly higher values of PSA without having prostate cancer , tPSA in the OAB was 5.18 ng/ml (SD 10.52) compared to tPSA of 3.55 ng/ml (SD 7.63) in patients who did not have OAB with a *P*-value of 0.001.

The worldwide variation in international prostate cancer incidence rates and trends is in part due to the substantial differences in the diagnosis of latent cancers, driven by PSA testing of asymptomatic individuals as well as after evaluation of prostate specimens. Almost 899,000 prostate cancer cases and 258,000 prostate cancer deaths are estimated to have occurred worldwide in 2008, with 72% of cases and 53% of deaths in developed countries. Prostate cancer incidence rates varied 24-fold worldwide in 2008, with the highest estimated rates in Australia/New Zealand, Western Europe, North America, and the Caribbean and the lowest in southern

central Asia, northern Africa, and eastern Asia. Both the United States and Canada (except Quebec) have among the highest prostate cancer incidence rates worldwide, although incidence trends have been stabilizing over the last 10 years[2]. Mortality rates are intermediate and decreased by 4.3% in the United States and 3.1% in Canada over the last decade for which data are available[16].

Prostate cancer incidence rates in Asia are among the lowest worldwide; however, rates have increased in almost all countries examined, with the increases varying from 3.1% per year on average in the Philippines and Thailand to 13.8% per year in the Republic of Korea[17]. Notably, the rapid rise in the incidence rate of prostate cancer been accompanied by a similar trend in the number of deaths from this disease[18].

In a 2010 investigation into the epidemiology of male urogenital cancers in different parts of the Arab world, prostate cancer accounted for 7.4% of total cancers in the male population, ranking fifth, and accounted for 18% of urogenital cancers in Lebanon, 9.8% in Kuwait, 12% in Algeria, 7.3% in the UAE, 6.6% in Bahrain, and 6.6% in Oman, the median age of cancer patients in our study was 74 years, while it was 69 years in the 2010 JCR report[19].

Our data is a retrospective data suffering some limitations regarding documentation, prostate volume assessment and inconsistencies due to differences in individual practices. We are collecting the data regarding prostate diseases from 2011-2014 era and we are hopeful to be more accurate and complete since most of the data is now computerized.

Conclusion: Our report comes in agreement with international literature regarding the clinical characters of BPH, international guidelines should be implemented among different institutions and treating physicians to avoid inconsistencies, our finding regarding the relationship between OAB and PSA needs further data collection and analysis. Regarding prostate cancer, we noticed that the percentage of patients who needed prostate biopsy is less than that reported in the literature with lower rates of biopsy-proven cancers, and probably more aggressive tumors, sub-analysis and further studies are needed to clarify this findings

Future work will concentrate on the following goals. First, the two major groups of patients (BPH and prostate cancer) will be analyzed separately including details concerning staging, treatment, and outcomes. Second, we will assess PSA utility in Jordan by means of receiver operating characteristic curves. Third, data from the period from 2011–2014 is currently being collected avoiding some gaps in information, since our hospital has finished computerizing all patient data, (operative notes, ultrasound and radiological reports, and clinical notes). Finally, in light of our finding that tPSA was much higher in the subset of patients who had OAB, additional analyses are planned to investigate this finding in greater detail.

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أمراض الموثة في الشرق الأوسط، مراجعة سريرية– مرضية في مستشفى الملك المؤسس– عبدالله الجامعي في الأردن

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الملخص

الهدف: تصيب أمراض الموثة – وعلى نطاق العالم وبشكل شائع– الذكور فوق سن الخمسين عاما، وتهدف هذه الدراسة لتحديد صفات هذه الأمراض السريرية والمرضية في مستشفى الملك المؤسس عبدالله الجامعي في الأردن كعينة ممثلة لسكان الشرق الأوسط.

الطريقة: تكونت مادة البحث من الرجال الذين زاروا عيادة المسالك البولية بشكوى تتعلق بالموثة، تم تقسيمهم إلى 1– المرضى الذين اجروا خزعة لغدة الموثة لنفي وجود سرطان مقابل 2– المرضى الذين تم تقييمهم/علاجهم بسبب أمراض الموثة الحميدة. قمنا بجمع معلومات المرضى الحيوية، وحساب معدلات وجود الأمراض المختلفة كالسرطان، تضخم الموثة الحميد، ورم الموثة داخل–الطلائي، السكري، التهاب الموثة (غير الإنتاني)، وفرط نشاط المثانة البولية.

النتائج: تضمنت عينة البحث 2,966 مريضاً، معدل أعمار المرضى كافة = 68.7 سنة تضخم الموثة الحميد كان المرض الأكثر شيوعا (56.3%) من المرضى، السكري في 26.5%، فرط نشاط المثانة 15.1%. من ال 272 مريض الذين أجريت لهم العينة، تم تشخيص 78 حالة سرطان (28.7%)، هناك علاقة وطيدة بين تشخيص سرطان البروستات والعمر (P=0.042)، في مجموعة المرضى الذين لم تجرى لهم خزعة (n=2,693) تضخم الموثة كان في 54.2%، معدل المستضد الخاص بالموثة كان بشكل عام 6.4 ng/ml مع زيادة مطردة فيه مع العمر، في مجموعة الخزعة (11.96ng/ml)، وفي مرضى السرطان (15.6 ng/ml). وفي مجموعة تضخم الموثة كان (4.58ng/ml) المرضى الذين أجريت لهم عملية تجريف الموثة كان المعدل هو (11.9ng/ml) مقارنة ب (3.11ng/ml) للمرضى الذين عولجوا بالأدوية (P<0.001). مرضى السكري كان لديهم معدل أقل (P<0.001 2.86 ng/m) بينما مرضى فرط نشاط المثانة كان لديهم معدلات أعلى (5.18ng/ml, P<0.001).

الاستنتاجات: تأتي نتائجنا متوائمة مع الأدب الطبي العالمي بما يخص ميزات تضخم الموثة الحميد، كما يسبب فرط نشاط المثانة بزيادة قيم المستضد الخاص بالموثه. أما بالنسبة لسرطان الموثة فإن النسبة المئوية للمرضى الذين احتاجو الخزعة ونسب وجود السرطان كانت أقل من النسب العالمية مع ملاحظة أن السرطانات كانت أكثر عدوانية، نحتاج إلى المزيد من الدراسات لتأكيد نتائج هذه الدراسة.

الكلمات الدالة: أمراض الموثة، الشرق الأوسط الأردن، مستشفى الملك عبد الله الجامعي.