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Observational study of surgical treatment of prostate cancer in Iraq

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ABSTRACT

Prostate cancer is the second prevalent cancer in man, and its incidence is steadily rising. The study aimed to observed features of prostate cancer and surgical treatment modalities in Iraq. A retrospective observational study, conducted among patients diagnosed with PC, at Medical City. Data were retrospectively documented from the medical files of cases who were diagnosed with PC from March 2018 to March 2022. Males, who were diagnosed and confirmed adenocarcinoma of the prostate and received at least one prostate-specific treatment either surgery or radiotherapy. Demographics age and ethnicity, family history, clinical states, and comorbidities, histological PC type, TNM stage, Gleason score, risk group, and baseline PSA level were collected. Totally, 115 patients who met the eligibility criteria were included. The majority of patients showed localized or locally advanced tumor (69, 60.00%), whereas metastatic cases were (46, 40.00%). Hypertension found in PC and metastatic as (53 (76.81%) versus 38 (82.61%)), diabetes (41 (59.42%) versus 22 (47.82%)), and ischemic heart disease (6 (8.69%) versus 7 (15.22%)) were the most common comorbidities. Overall, most patients were diagnosed at stage III (40, 57.97%). Patients with metastatic PC were mainly detected at stage IV (78.26%). Most patients have GS under 6 (30, 43.48%) in localized tumors. All patients with localized disease have mean PSA 336.26±102.75 ng/mL and the mean PSA values for metastasis cases was 1304.54±78.53 ng/mL with significant difference (p=0.05). Among patients with localized/locally advanced PC, radical prostatectomy done in 19(27.53%), robotic prostatectomy 12(17.39%), bilateral orchiectomy 5(7.24%) and surgical castration 15(21.74%). However, 18 cases did not undergo surgery. In conclusion, most patients were diagnosed at moderately advanced or advanced TNM. Patients with localized/locally advanced PC were most commonly treated with radical prostatectomy. Patients with metastatic disease were most commonly untreated with surgery. These data reflect the challenge in managing metastatic patients.

Key words: prostate cancer, prostatectomy, gleason score

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INTRODUCTION

Prostate Cancer (PC) is the second most prevalent malignancy in men after lung cancer, accounting for 375,304 deaths (3.8% of all cancer-related deaths) and 1,414,259 new cases (7.3% of all new cancer cases) worldwide [1]. The incidence is lower in Asia and the Middle East and North Africa compared with the United States of America (USA) [2, 3]. The diagnosis of PC is based on an elevated Prostate-Specific Antigen (PSA) level or trans-rectal ultrasonography–guided needle biopsy of the prostate [4]. MRI, CT scan, bone scan, and PISMA can be used in evaluation [5]. There are established risk factors including old age, ethnicity mostly African Americans, and family history [6].

Radical prostatectomy, radiotherapy, brachytherapy, and Androgen Deprivation Therapy (ADT), are the treatment modalities for PC [7,8]. Radical prostatectomy is the mainstay treatment option for localized/locally advanced PC [7]. Robotic or laparoscopic prostatectomy is often preferred as it has better efficacy and fewer side effects [9].

Thus, the aim of this study was to observe the properties of PC and surgical treatment modalities in Iraq.

METHODS

Study design

A retrospective observational study, was conducted among patients diagnosed with PC, at Medical City. Data were retrospectively documented from the medical files of cases who were diagnosed with PC from March 2018 to March 2022.

Study population

Males were diagnosed and confirmed adenocarcinoma of the prostate and received at least one prostate-specific treatment either surgery or radiotherapy.

Variables

Demographics age and ethnicity, family history, clinical status, and comorbidities, histological PC type, TNM stage, Gleason score, risk group, and baseline PSA level were collected.

Statistical analysis

SPSS, version 20 (IBM, NY, USA) was used. Descriptive statistics for continuous variables were summarized by mean with SD; the categorical variables were frequency and percentage. Median

survival times with 95% Confidence Intervals (95% CIs) were calculated.

RESULTS

Totally, 115 patients who met the eligibility criteria were included. The majority of patients showed localized or locally advanced tumours (69, 60.00%), whereas metastatic cases were (46, 40.00%). The mean age at diagnosis was insignificant between both groups. The majority of males were Caucasian (41(59.42%) for localized or locally advanced disease and 29(63.04%) for metastatic). Most of the cases did not record to have a family history. Hypertension found in PC and metastatic as (53 (76.81%) versus 38 (82.61%)), diabetes (41 (59.42%) versus 22 (47.82%)), and ischemic heart disease (6 (8.69%) versus 7 (15.22%)) were the most common comorbidities, (Table 1).

The most common histology types were acinar adenocarcinoma in both classes (62 (89.85%) versus 43(93.47%)). Overall, most patients were diagnosed at stage III (40, 57.97%). Patients with metastatic PC were mainly detected at stage IV (78.26%); however, most localized tumour belonged to stage III (57.97%), with a highly significant difference (p<0.0001). Most patients have GS under 6 (30, 43.48%) in localized tumors whereas the distribution was slightly the same in metastasis disease with a significant difference (p= 0.02). All patients with localized disease have mean PSA of 336.26±102.75 ng/mL. The mean PSA value for metastasis cases was 1304.54±78.53 ng/mL with a significant difference (p=0.05), (Table 2).

Table 3 showed the surgical treatments. Among patients with localized/locally advanced PC, radical prostatectomy was done in 19(27.53%), robotic prostatectomy 12(17.39%), bilateral orchiectomy 5(7.24%), and surgical castration 15(21.74%). However, 18 case not underwent surgery. Furthermore, 35(76.08%) of metastatic cases not underwent surgery with a highly significant difference (p<0.0001).

DISCUSSION

The majority of patients showed localized/ locally advanced tumor (69, 60.00%), whereas metastatic cases were (46, 40.00%). The mean age at diagnosis was insignificant between both groups. The mean age in this study is nearly greater than findings from previous research in the Middle East (68 years) [10], and globally (66 years) [11].

HT, DM, and IHD were the main comorbidities seen; these most commonly co-occur with PC [12], and can effect treatment chosen and survival of patients [13].

Overall, most patients were diagnosed at stage III whereas those with metastatic PC were mainly detected at stage IV, indicating that a moderately advanced or advanced TNM stage of PC are the prevalent. This finding may be due to low knowledge and attitude screening program [14].

The most common histology types were acinar adenocarcinoma in both classes. Most patients have GS fewer than 6 in localized tumors whereas the distribution was slightly the same in metastasis

Tab. 1. Demographics of the study

Variables	Localized/locally advanced (n=69) n (%) / mean ± SD	Metastatic (n=46)	P value
Age (years)	70.25 ±5.68	71.38 ±6.45	0.19
Caucasian ethnic	41 (59.42)	29 (63.04)	0.69
Family history positive	5 (7.24)	4 (8.69)	0.77
DM	41 (59.42)	22 (47.82)	0.22
HT	53 (76.81)	38 (82.61)	0.45
IHD	6 (8.69)	7 (15.22)	0.28

Tab. 2. Tumor characteristics at diagnosis.

Variables		Localized/locally advanced (n=69) n (%)	Metastatic (n=46)	P value
Histology	Acinar adenocarcinoma	62 (89.85)	43 (93.47)	0.64
	Ductal adenocarcinoma	6 (8.69)	2 (4.35)	
	Transitional cell cancer	1 (1.45)	1 (2.18)	
TNM stage	I	3 (4.35)	-	<0.0001
	II	24 (34.78)	-	
	III	40 (57.97)	10 (21.74)	
	IV	2 (2.89)	36 (78.26)	
Gleason score	≤6	30 (43.48)	10 (21.74)	0.02
	3+4	16 (23.18)	7 (15.22)	
	4+3	11 (15.94)	10 (21.74)	
	8	7 (10.14)	10 (21.74)	
	9+10	5 (7.24)	9 (19.56)	
PSA at baseline (ng/mL) Mean±SD		336.26±102.75	1304.54±78.53	0.05

Tab. 3. Surgical treatment

Treatment	Localized/locally advanced PC (n=69) n (%)	Metastatic (n=46)	P value
Radical prostatectomy	19 (27.53)	2 (4.35)	<0.0001
Robotic prostatectomy	12 (17.39)	1 (2.18)	
Bilateral orchiectomy	5 (7.24)	1 (2.18)	
Surgical castration	15 (21.74)	7 (15.22)	
No	18 (26.08)	35 (76.08)	

disease. All patients with localized disease have lower PSA than in the metastasis cases. This agrees with previously works like [15-19].

Among patients with localized/locally advanced PC, radical prostatectomy done in 19(27.53%), robotic prostatectomy 12(17.39%), bilateral orchiectomy 5(7.24%) and surgical castration 15(21.74%); however, 18 case not underwent surgery. Furthermore, most metastatic cases not underwent surgery. The surgical treatment modalities in this work are in line with the international guidelines, which recommend surgery (radical prostatectomy) and radiation therapy for patients with localized/locally advanced PC; while ADT, palliative surgery, palliative radiotherapy, palliative chemotherapy, anti-androgens and corticosteroids are recommended for metastatic cases [20, 21].

CONCLUSION

Most patients were diagnosed at a moderately advanced or advanced TNM. Patients with localized/locally advanced PC were most commonly treated with radical prostatectomy. Patients with metastatic disease were most commonly untreated with surgery. These data reflect the challenge in managing metastatic patients.

CONFLICT OF INTERESTING

None.

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