



Epidemiological Study of Male Genito-urinary Malignancies at Clinical Oncology Department Tanta University Hospitals

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Abstract: Background: Genitourinary cancers, in particular carcinoma of the kidneys, bladder, and prostate take a large toll on human health and placed significant economic burden on health care systems. The aim of this work was to determine the burden of male genito-urinary malignancy, describe the clinico-pathological pattern of all male genito-urinary tumors and find tools for screening and early diagnosis. Methods: This retrospective hospital based epidemiological study was carried out on 610 patients who were histopathologically proved to have male genito-urinary malignanc. All patients were subjected to: Patient evaluation through careful history taking, general examination and local examination. Investigations including: Pathological finding, laboratory investigations and radiological investigations. Results: Bladder cancer ranked the first among other types of male genito-urinary cancers. The second was prostate cancer followed by kidney cancer then testicular cancer. the age group (61-80) years is the most common age group affected by male genitourinary cancers followed by the age group (41-60) years. The mean age of male genitourinary cancers was 66.7 years with a median age of 67 years. The majority of cases were from two administrative areas; Tanta and Al-Mahalla El-Kobra, the total percentage from Tanta & Al-Mahalla El-kobra represented nearly 80% of the studied patients. The most common co-morbidities were hypertension, diabetes mellitus and liver cirrhosis. Most of the male genitourinary cancer patients were smokers with negative family history. The most common male genitourinary cancer affected by bilhareziasis was the bladder cancer. Conclusions: We conclude that the most common types of male genito-urinary malignancies included: bladder cancer, prostate cancer, kidney cancer, testicular cancer. The most common histo-pathological subtype in bladder cancer was transitional cell carcinoma, while in prostate cancer was prostatic adenocarcinoma, in kidney cancer was renal cell carcinoma and in testicular cancer was seminoma.

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1. Introduction:

Genitourinary cancers, in particular carcinoma of the kidneys, bladder, and prostate take a large toll on human health and placed significant economic burden on health care systems^[1].

According to Globocan 2018, the global incidence of prostate cancer was 7.1%, bladder cancer 3%, kidney cancer 2.2% & testicular cancer 0.4 % in all tumors^[2]. In Egypt, according to incidence rate, the bladder cancer is the fourth tumor and represent 7.2% of all tumors incidence, prostate cancer rank 9 in all tumors and represent 4.2%, kidney cancer rank 15 and represent 1.5%, testicular cancer rank 30 and represent 0.17% , cancer of penis rank 35 and represent 0.01% of all tumors incidence^[3].

As regard bladder cancer, there are two predominant histologic types of urinary bladder cancer, urothelial cell and squamous cell carcinoma

(SCC). Cigarette smoking, occupational exposures to carcinogens, and chronic infection with Schistosoma haematobium have been established as risk factors for bladder cancer^[4].

As regard prostate cancer, Adenocarcinoma of the prostate comprises 95% of the malignant neoplasms in this organ. Most prostate cancers arise in the peripheral zone (70-75%), with only 10-15% occurring in the transition zone and ~10% in the central zone. There are three well-established risk factors for Prostate cancer, namely age, family history, and ethnic origin^[5].

As regard kidney cancer, Kidney cancer may arise from the renal parenchyma or renal pelvis. Renal pelvic carcinomas are urothelial in origin and share common characteristics with other tumors arising from the urothelium. On the other hand, RCCs can be classified broadly into clear cell and non-clear cell carcinomas; non-clear cell histology includes

papillary carcinoma, chromophobe carcinoma and collecting duct carcinoma in addition to some other rarer variants^[6]

Risk factors of RCC are divided into controllable (environmental) or uncontrollable. Environmental risk factors include cigarette smoking, obesity, diet, and hypertension. Uncontrollable risk factors include family history and the need for dialysis because of renal disease^[7]

As regard testicular tumors, it can be classified into three categories: germ cell tumours, cord stromal tumours, and miscellaneous germ cell/sex cord stromal tumors. risk factors include History of cryptorchidism, Klinefelter syndrome, Testicular cancer in first-grade relatives, Contralateral tumour, testicular intraepithelial neoplasm (TIN) or infertility^[8]

The aim of this work was to determine the burden of male genito-urinary malignancy, describe the clinico-pathological pattern of all male genito-urinary tumors and find tools for screening and early diagnosis.

2. Patients and Methods:

This retrospective hospital based epidemiological study was carried out on 610 patients who were histopathologically proved to have male genito-urinary malignancies at Clinical Oncology Department Tanta university Hospital through the period from Aug 2014 to Sep 2019.

An informed written consent was obtained from the patient or relatives of the patients. The study was done after approval from the Ethical Committee Tanta University Hospitals.

Exclusion criteria were patients less than 18 years old, male patients with second primary rather than genito-urinary tract malignancies.

All patients were subjected to: Careful history taking (Personal history, history of the illness, family history, Past history and others co-morbidity), general examination which include general appearance, vital signs, head & neck, chest, upper and lower limb examination and local examination which include abdomen and pelvic examination, investigations including: Pathological finding (Pathologically proven genito-urinary tumors), laboratory investigations (Complete blood picture, kidney function tests, liver function tests, urine analysis and urine cytology in bladder cancer) and tumor marker e.g. PSA in prostate cancer and LDH, AFP & HCG in testicular cancer and radiological investigations (Chest radio-graph, Ultrasound / TRUS, CT/MRI abdomen and pelvis, bone scan).

Assessment of tumor response:

A tumor response assessment was performed after treatment according to RECIST criteria version 1.1^[9]. Tumor response was assessed by CT scan and/or MRI for all patients one week after last cycle of chemotherapy & 4weeks after the end of CCRTH to evaluate the radiological response. Cystoscopy and biopsy were performed for patients who achieved a complete radiological response to confirm the pathological response.

Recist criteria

A clinical complete response (CR): was defined as the complete disappearance of the intravesical lesion and normalization of the computed tomography findings pathological complete response is confirmed by cystoscopic biopsy in case of clinical complete response.

A partial response (PR): was defined as a 50% decrease in the sum of the products of two perpendicular diameters of all measurable lesions for a minimum of 4 weeks with no increase of 25% in the size of any single lesion.

Progressive disease (PD): if any new lesion appeared, if the tumor size increased 25% greater than the pre-treatment measurements, or in the case of deterioration in clinical status consistent with disease progression.

Stable disease (SD): patients whose findings did not meet the criteria of CR, PR, or PD and who could be followed for at least 2 months were classified as having stable disease.

Statistical analysis

Statistical analysis was done by SPSS v21 (IBM Inc., Chicago, IL, USA). Quantitative variables were presented as mean and standard deviation (SD). Qualitative variables were presented as frequency and percentage (%).

3. Results:

Table 1 show that distribution of studied patients according to tumor site, age groups, administrative area in Gharbia Governorate, comorbidities, marital status, family history and risk factors.

Table 2 shows distribution of bladder cancer patients according to age, histopathological subtype, and disease stage, treatment approach, treatment response according to treatment modality, overall survival and disease-free survival in bladder cancer.

Table 3 shows Distribution of prostate cancer patients according to age, histopathological subtypes, Gleason score, PSA level, stage, treatment approach, treatment response according to treatment modality,

overall survival and disease-free survival in kidney cancer.

Table 4 shows distribution of kidney cancer patients according to age, pathological subtypes,

stage, treatment approach, treatment response according to treatment modality, overall survival and disease-free survival in kidney cancer

Table 1: Distribution of studied patients according to tumor site, age groups, 464 studied patients in Gharbia Governorate by administrative area, comorbidities, marital status, family history and risk factors.

Type of cancer	2014 n =92	2015 n =103	2016 n =85	2017 n =134	2018 n =131	2019 n =65	Total n =610
Bladder	48(52.1%)	54(52.4%)	40(47%)	63(47%)	62(47.3%)	37(56.9%)	304(49.8%)
Prostate	31(33.6%)	38(36.8%)	34(40%)	59(44%)	61(46.5%)	23(35.3%)	246(40.3%)
Kidney	10(10.8%)	10(9.7%)	11(12.9%)	9(6.7)	7 (5.3%)	3(4.6%)	50(8.2%)
Testis	3(3.2%)	1(0.97%)	0(0%)	3(2.2%)	1(0.76%)	2(3%)	10(1.6%)
Distribution according to age							
Age group (Years)	20-40	41-60	61-80	>80	66.7 ±10		
Number n =610	15 (2.4%)	128 (20.9%)	431(20.7%)	36 (5.9%)			
Distribution in Gharbia Governorate							
Gharbia Governorate	Tanta	Al-Mahalla El-kobra	Kafr-ElZiat	Al-Santa	Kotor	Bassune	Smanoud
Total (n =464)	202(43.5%)	174(37.5%)	24(5.2%)	20(4.3%)	18(3.9%)	14(3%)	12(2.6%)
Comorbidity		Prostate (n =246)	Bladder (n =304)	Kidney (n =50)	Testis (n =10)	Total (n =610)	
DM		60 (24.4%)	63 (20.7%)	11 (22%)	2 (20%)	136 (22.3%)	
HTN		70 (28.5%)	82 (27%)	13 (26%)	3 (30%)	168 (27.5%)	
Cardiac		12 (4.9%)	21 (6.9%)	5(10%)	1 (10%)	39 (6.4%)	
Multiple co morbidity (DM, HTN, cardiac)		53 (21.5%)	43 (14%)	2(4%)	0 (0%)	98 (16%)	
Cirrhotic		31(12.6%)	55 (18.1%)	16(32%)	4 (40%)	106 (17.4%)	
Renal		1 (0.4%)	3 (1%)	0 (0%)	0 (0%)	4 (0.7%)	
Unregistered		19 (7.7%)	37 (12.2%)	3 (6%)	0 (0%)	59 (9.6%)	
Characteristics		Prostate (n =246)	Bladder (n =304)	Kidney (n =50)	Testis (n =10)	Total (n =610)	
Marital status	Single	1 (0.4%)	0 (0%)	0 (0%)	1 (10%)	2 (0.3%)	
	Married	229 (93%)	282(92.8%)	46 (92%)	9 (90%)	566 (92.8%)	
	Widow	3 (1.2%)	2 (0.7%)	0 (0%)	0 (0%)	5 (0.8%)	
	Divorced	0 (0%)	1 (0.3%)	0 (0%)	0 (0%)	1 (0.2%)	
	Unregistered	13 (5.3%)	19 (6.25)	4 (8%)	0 (0%)	36 (5.9%)	
Risk factors	Smoker	106 (43.1%)	128(42.1%)	17 (34%)	2 (20%)	253 (41.5%)	
	Bilharziasis	0 (0%)	23(7.6%)	0 (0%)	0 (0%)	23(3.8%)	
	Smoking & bilharziasis	0 (0%)	14(4.6%)	0 (0%)	0 (0%)	14 (2.3%)	
	No risk factors	140 (56.9%)	139(45.7%)	33 (66%)	8 (80%)	320 (52.5%)	
Family history	Positive	14 (5.7%)	18(5.9%)	4 (8%)	1 (10%)	37 (61.1%)	
	Negative	232 (94.3%)	286(94.1%)	46 (92%)	9 (90%)	573 (93.9%)	

Data was presented as Mean ± SD

Table 2: Distribution of bladder cancer patients according to age, histopathological subtype and disease stage, treatment, treatment response in bladder cancer according to treatment modality, overall survival and disease-free survival in bladder cancer

Age group(years)		Total (n =304)			
20-40		5 (1.6%)			
41-60		76 (25%)			
61-80		207 (68.1%)			
>80		16 (5.3%)			
Histopathological subtype					
Transitional cell carcinoma		292 (96.1%)			
Squamous cell carcinoma		8 (2.6%)			
Adenocarcinoma		2 (0.7%)			
Sarcoma		1 (0.3%)			
Anaplastic carcinoma		1 (0.3%)			
Stage					
Stage I		24 (7.89%)			
Stage II		57 (18.75%)			
Stage III		79 (25.98%)			
Stage IV		144 (47.36%)			
Treatment					
Surgery	TUR	267 (87.83%)			
	Maximum TUR	30 (9.87%)			
	Radical Cystectomy	7 (2.30%)			
BCG		10 (3.29%)			
Radiotherapy		56 (18.42%)			
Chemotherapy		127 (41.77%)			
Combined chemo and radiotherapy		125 (41.18%)			
Treatment response	Overall	Complete	Partial	Stable disease	Progressive disease
Radiotherapy	46 (15.13%)	19 (6.25%)	27 (8.88%)	6 (10.71%)	4 (7.14%)
Chemotherapy	87 (28.62%)	21 (6.91%)	66 (21.71%)	27 (21.26%)	13 (10.24%)
Combined radio and chemotherapy	117 (38.49%)	66 (21.71%)	51 (16.78%)	5 (4%)	3 (2.40%)
Years	overall survival (%)		Disease free survival (%)		
2 -year	62.17%		56.58%		
3 -year	58.5%		51.31%		
5 -year	50.65 %		47.37%		

Data was presented as Mean \pm SD

Table 3: Distribution of prostate cancer patients according to age, histopathological subtypes, Gleason score, PSA level, stage, treatment approach, treatment response according to treatment modality, overall survival and disease-free survival in kidney cancer

Age group (year)	Total (n =246)				
20-40	0 (0%)				
41-60	30 (20.5%)				
61-80	196 (79.7%)				
>80	20 (8.1%)				
Pathology					
Adenocarcinoma	244 (99.2%)				
Neuroendocrine	1 (0.4%)				
Anaplastic carcinoma	1 (0.4%)				
Gleason Score	≤6	7		8-10	
	41 (16.6%)	87 (35.4%)		118 (48%)	
PSA level (ng/ml)	<10	10-20		>20	
	3(1.22%)	19(7.72%)		224 (91.06%)	
Stage					
Stage I	1 (0.4%)				
Stage II	29 (11.8%)				
Stage III	30 (12.2%)				
Stage IV	186 (75.6%)				
Treatment					
Hormonal treatment + Radiotherapy	121 (49.19%)				
Hormonal treatment (surgical & medical castration)	52 (21.15%)				
Radiotherapy (palliative)	22 (8.94%)				
Chemotherapy	16 (6.5%)				
Surveillance	14 (5.69%)				
Surgery + Radiotherapy	9 (3.66%)				
Surgery (Radical prostatectomy)	7 (2.84%)				
Surgery + Hormonal treatment + Radiotherapy	5 (2.03%)				
Treatment response	Overall	Complete	Partial	Stabledisease	Progressive disease
Radiotherapy	19 (7.72%)	12 (4.88%)	7 (2.85%)	2 (9.09%)	1 (4.55%)
Hormonal treatment + Radiotherapy	102 (41.46%)	23 (9.35%)	79 (32.11%)	13 (10.74%)	6 (4.96%)
Hormonal treatment	43 (17.48%)	14 (5.69%)	29 (11.79%)	6 (11.54%)	3 (5.77%)
Surgery + Radiotherapy	7 (2.85%)	6 (2.44%)	1 (0.4%)	2 (22.22%)	0 (0%)
Chemotherapy	10 (4.07%)	2 (0.81%)	8 (3.25%)	4 (25%)	2 (12.5%)
Years	Overall survival (%)			Disease free survival (%)	
2 -year	62.19			55.28	
3 -year	58.74			52.91	
5 -year	50.48			45.63	

Data was presented as Mean ± SD.

Table 4: Distribution of kidney cancer patients according to age, pathological subtypes, stage, treatment approach, treatment response according to treatment modality, overall survival and disease-free survival in kidney cancer

Age group (year)	Total (n =50)				
20-40	3 (6%)				
41-60	19 (38%)				
61-80	28 (56%)				
>80	0 (0%)				
Pathology					
Renal cell carcinoma	46 (92%)				
Transitional cell carcinoma	3 (6%)				
Oncocytoma	1 (2%)				
Stage					
Stage I	3 (6%)				
Stage II	6 (12%)				
Stage III	14 (28%)				
Stage IV	27 (54%)				
Treatment					
Surgery + Targeted therapy	17 (34%)				
Surgery + Radiotherapy	13 (26%)				
Surgery alone	12 (24%)				
Targeted therapy	5 (10%)				
Surgery + Chemotherapy	2 (4%)				
Radiotherapy + Targeted therapy	1 (2%)				
Treatment response	Overall	Complete	Partial	Stabledisease	Progressive disease
Surgery + Radiotherapy	12 (24%)	8 (16%)	4 (8%)	1 (7.69%)	0 (0%)
Surgery + Targeted therapy	15 (30%)	7 (14%)	8 (16%)	1 (5.88%)	1 (5.88%)
Surgery alone	10 (20%)	6 (12%)	4 (8%)	2 (16.67%)	0 (0%)
Years	Overall survival (%)			Disease free survival (%)	
2 -year	56			40	
3 -year	46.80			36.17	
5 -year	35.48			29.03	

Data was presented as Mean \pm SD

Table 5 shows distribution of testicular cancer patients according to age, histopathological subtypes, increased tumor markers, stage, treatment approach, treatment response according to treatment modality, overall survival and disease-free survival in testicular cancer.

Table 5: Distribution of testicular cancer patients according to age, histopathological subtypes, increased tumor markers, stage, treatment approach, treatment response according to treatment modality, overall survival and disease-free survival in testicular cancer

Age group (year)	Total (n =10)				
20-40	7 (70%)				
41-60	1 (10%)				
61-80	2 (20%)				
>80	0 (0 %)				
Pathology					
Seminoma	5 (50%)				
Mixed germ cell	3 (30%)				
Non-seminoma	1 (10%)				
Sarcoma	1 (10%)				
Tumor marker					
LDH	6 (60%)				
HCG	3 (30%)				
α-feto protein	4 (40%)				
Stage					
Stage I	3 (30%)				
Stage II	4 (40%)				
Stage III	3 (30%)				
Treatment					
Surgery (orchietomy)	10 (100%)				
Surgery + Chemotherapy	7 (70%)				
Surgery + Chemotherapy + Radiotherapy	2 (20%)				
Surgery + Radiotherapy	1 (10%)				
Treatment response	Overall response	Complete response	Partial response	Stable disease	Progressive disease
Surgery + Radiotherapy	1 (10%)	1 (10%)	0 (0%)	0 (0%)	0 (0%)
Surgery + Chemotherapy	6 (60%)	5 (50%)	1 (10%)	1 (14.29%)	0 (0%)
Surgery + Radiotherapy + Chemotherapy	2 (20%)	2 (20%)	0 (0%)	0 (0%)	0 (0%)
Years	Overall survival (%)			Disease free survival (%)	
2 -year	100			100	
3 -year	100			80	
5 -year	80			70	

Data was presented as Mean \pm SD. HCG: Human chorionic gonadotropin, LDH: Lactate dehydrogenase

4. Discussion

Male genital tract tumors account for a fairly large number of malignancies. Incidence of male genital cancer has increased rapidly over the period of time [10].

The data at our department showed that bladder cancer is the most common male genitourinary malignancies followed by prostate cancer then kidney

cancer and testicular cancer with a percentage 49.8%, 40.3%, 8.2% & 1.6% respectively.

Similar findings were found in Sub-Himalayan region where Panwar et al. [11] found that the bladder cancer ranks the first male genitourinary malignancies followed by prostate cancer then kidney cancer with a percentage of 61.1%, 24.2% & 8.8% respectively.

In contrast, in Port Harcourt, Nigeria, Ofuru et al. [12] found in their study that the most common male genitourinary malignancies were prostate cancer followed by bladder cancer then kidney cancer and testicular cancer with percentage 86.8% ,6.5%, 5.7% & 0.6 % respectively.

We found that the age group mainly affected was 61-80 years followed by age group 41-60 years. More than 95% of patients were more than 41 years old.

Tolou Ghamari et al. [13] found that the mean age \pm SD was 63.5 ± 15.8 years. The most occurrences of cancers (82%) were at the ages between 50 and 90 years old of patients' life.

In the present study, the highest frequency of patients was found from gharbia governorate which represented 464 patients (76%) of all studied patients & most common administrative areas were Tanta and Al-Mahalla El Kobra which represented 43.5 % & 37.5 % respectively from all gharbia patients.

In our study we found that most common comorbidity with male genitourinary tumors was hypertension followed by diabetes mellitus then liver cirrhosis. About more than 40% of all male genitourinary malignancies were smokers. Bilhareziasis was found in patients with bladder cancer with a percentage 7.6%. El-Bolkainy N. et al. [14] reported in their study that the percentage of bladder cancer cases associated with schistosomiasis at the Cairo Cancer Institute were 27.6%. Sow et al. [15] reported in their study that bladder bilharziomas represented 8.8% of bladder cancer patients which is comparable to our results.

Regarding bladder cancer, in our study we found that the most common age group affected by bladder cancer was 61-80 year with mean age 65.9 ± 9.4 years. This is similar to in the Nile delta region of Egypt where fedewa et al. [16] reported that the most common age affected by bladder cancer was 60–69 years.

In our study we found that the most common pathology in bladder cancer was transitional cell carcinoma with a percentage 96.1 % of all bladder cancers. Also in Lebanon, Lakkis et al. [17] reported in their study that transitional cell carcinoma is the most common type of bladder cancer.

In our study we found that the most common stages in bladder cancer was advanced stages (II, III & IV) which represented muscle invasive bladder cancer. The most common one of them was stage IV which represented 47.36% of all bladder cancer cases. At Aristide Le Dantec University Teaching Hospital, Sow et al [15] reported in their study that the majority of tumors were infiltrative (pT2, pT3, pT4) (66.2%) while in Benin, Nigeria Forae et al. [18] reported in their study that early pathological stages accounted

for 70.3% while late-stage cancer accounted for 29.7%.

In our study we found that all patients underwent surgery either TUR for diagnosis in 297 cases (97.7%) or radical cystectomy in 7 cases (2.3%), the most common type of treatment used after surgery was chemotherapy in 127 cases (41.77.5%) followed by combined chemo and radio therapy in 125 cases (41.18%). Sow et al. [15] found in their study that active treatments included radical cystectomy in 20 patients (13.3%) and radiotherapy in 40 patients (26.7%). The remaining 90 patients (60%) underwent transurethral resection of the bladder tumor only and refused further treatment.

In the current study, the highest overall response was with patients treated with combined chemo and radiotherapy in 117 (38.49%) patients. In our study 2, 3, and 5-year overall survival in bladder cancer patients was 62.17%, 58.8%, and 50.7% respectively, while the 2, 3, and 5-year disease free survival in bladder cancer patients was 56.58%, 51.31%, and 47.89% respectively

This is comparable to Kaufman et al. [19] who reported that 81% complete response and 5-year overall survival rate of 56% after the using combined radio and chemotherapy in bladder cancer.

Regarding prostate cancer, in our study we found that the most common age group affected by prostate cancer was 61-80 year with mean age 70.2 year & SD ± 7.7 . This is comparable to in alexandria where Elabbady et al. [20] reported in their study that the mean age for prostate cancer was 67 year.

In our study we reported that the most common pathology in prostate cancer was prostatic adenocarcinoma with a percentage 99.2% of all prostate cancers. This is in similar to Ahmadu Bello University Teaching Hospital (A.B.U.T.H), Zaria, Nigeria where Oluwole et al. [21] found in their study that all prostate cancer patients were adenocarcinomas.

In our study we found that the most common gleason score in prostate cancer was (8-10) with a percentage of 48 % of all prostate cancers. This is similar to In Manipur, where Desai et al. [22] found that the commonest gleason score found in prostate cancer was (8-10) with a percentage of 48%.

In our study we found that the most common PSA level in prostate cancer patients is >20 which represented 91% of all prostate cancer patients. This is in similar to in alexandria where Elabbady et al. [20] reported in their study that the majority of cases were with PSA > 20 . And in contrast to Fall et al [23] who reported that based on their study which included T1 and T2 prostate cancer patients at baseline with a PSA level of >20 (ng/ml) were 18%

of patients, from 10 to 20 were 30% of patients and less than 10% were 52% of patients.

In our study we found that the most common stages of prostate cancer were advanced stages (Stage III & IV which represented collectively 87.85%), stage IV which represented 75.6% followed by stage III which represented 12.25 of all prostate cancers. This is comparable to that in Calabar, South-South, Nigeria where Bassey et al. [24] found in their study that most patients (72, 64.8%) had at least stage 2B and above and in contrast to In Pennsylvania where Merriel et al. [25] found in their study that T1 & T2 stages represented around 72.8% while T3&T4 stages represented around 27.17% of all prostate cancer patients.

In our study we found that the most common treatment approach used was hormonal treatment plus radiotherapy in 121 cases (49.19%) followed by hormonal treatment alone in 52 cases (21.15%) then radiotherapy in 22 cases (8.94%) and surgery done in 21 cases (8.53%) either alone or with other treatment modality then chemotherapy in 16 cases (6.5%). This is comparable to In Calabar, South, where Nigeria-South Bassey et al. [24] found in their study that over half of the patients were placed on antiandrogens for treatment and in contrast to Cooperberg et al. [26] who found in their study that regarding treatment of prostate cancer, 44.7% underwent prostatectomy, 22.0% surveillance, 19.5% radiation (RT), 8.8% androgen deprivation, and 3.6% watchful waiting (WW). This may be due to most of our patients were advanced stages.

In our study we found that the highest overall response was with patients treated with Hormonal treatment + Radiotherapy in 41.46% patients, while 10.74% patients had stable disease and 4.96% patients had progressive disease, followed by hormonal treatment in 17.48% patients, while 11.54% patients had stable disease and 5.77% patients had progressive disease. overall response in patients treated with chemotherapy was in 4.07% patients and we found that 2, 3, and 5-year overall survival in prostate cancer patients was 62.19%, 58.74% and 50.48% respectively while the 2, 3, and 5-year disease free survival in prostate cancer patients and it was 55.28%, 52.91% and 45.63% respectively.

In our study the total overall response in patients treated with hormonal treatment either alone or with radiotherapy was 58.9%, this is comparable to Akaza et al. [27] included 205 Japanese men with prostate cancer treated with hormonal therapy and they reported an overall response rate from 65% to 77% according to type of hormonal therapy used and reported that the number of deaths is too small to assess survival. Choueiri et al., [28] found in their study

that that 5 year overall survival for prostate cancer patients was 59%.

Regarding kidney cancer, in our study we found that the most common age group affected by kidney cancer was 61-80 year with mean age 60.6 year & SD \pm 10.7. This is comparable to that in Manipur where Desai et al. [22] found in their study that the mean age for kidney cancer was 63.7 year.

In our study we found that the most common pathology in kidney cancer was renal cell carcinoma with a percentage 92% of all kidney cancers. This is similar to in Manipur, where Desai et al. [22] found in their study that the most common pathology was renal cell carcinoma.

In our study we found that the most common stages in kidney cancer was advanced stages, stage IV which represented 54% followed by stage III which represented 28% of all kidney cancer patients. This was similar to Joshi et al. [29] found in their study that the most common stage was stage IV which represented 43% followed by stage III which represented 26% of all kidney cancer patients.

In our study we found that the most common used treatment method was surgery which was done in 44 patients (88%) and used in combination with other modalities as surgery + targeted therapy in 17 (34%) cases followed by surgery + radiotherapy in 13 (26%) cases or surgery alone in 12 (24%) cases. This is similar to that in a Semi-urban population of south-western nigeria, Salako et al. [30] reported in their study that they offered surgery to almost all of their kidney cancer patients (92.2%).

In our study we found that the highest overall response was with patients treated with surgery + targeted therapy in 15 (30%) patients followed by surgery + radiotherapy in 12 (24%) patients. 2, 3, and 5-year overall survival in kidney cancer patients was 56%, 46.8%, and 35.48% respectively. while the 2, 3, and 5-year disease free survival in kidney cancer patients, and it was 40%, 36.17%, and 29.03% respectively. This is comparable to Kroeger, N. et al. [31] who found that 5 year disease free survival in kidney cancer patients was 26%.

Regarding testicular cancer, in our study we found that the most common age group affected by testicular cancer was 20-40 year with mean age 39.3 year & SD \pm 13.9. This is comparable to taht in Manipur where Desai et al. [22] found in their study that the mean age for testicular cancer was 35 years

In our study we found that the most common pathology in testicular cancer was seminoma with a percentage of 50% followed by mixed germ cell tumors with a percentage 30% of all testicular cancers. This is similar to that in Manipur where Desai et al. [22] found in their study that the most common pathology found in testicular cancer was

seminoma. In contrast to in Ile-Ife, south-western Nigeria where Igbokwe et al. [32] found in their study that the most common pathology found in testicular cancer was mixed germ cell tumors with percentage of 38.4% followed by seminoma with a percentage of 30.8% of all testicular cancer pathology.

In our study we found that the most common increased tumor marker was LDH in 6 (60%) patients followed by α -feto protein in 4 (40%) patients. This is similar to Islam et al. [33] who reported that Lactate dehydrogenase (LDH) is the most common marker in seminoma.

In our study we found that the most common stages in testicular cancer was stage II which represented 40% followed by stage I & stage III, each of them represented 30% of all testicular cancer patients. So we have about 70% of our patient with stage I & II, this is comparable to Stevenson et al. [34] who found that nearly 70-80% of patients with low stage testicular tumours.

In our study, the most treatment modality used was surgical treatment which done in all cases (100%) followed by surgery + chemotherapy in 7 (70%) patients. This is comparable to Lubberts et al. [35] who reported that Chemotherapy used in stage I, II & III testicular cancer & this support our result that 90% of our patient received chemotherapy.

In the current study we found that the highest overall response was with patients treated with surgery + chemotherapy in 6 (60%) patients followed by surgery + radiotherapy + chemotherapy in 2 (20%) patients. We also found that 2, 3, and 5-year overall survival in testicular cancer patients, it was 100%, 100%, and 80% respectively while the 2, 3, and 5-year disease free survival in testicular cancer patients, it was 100%, 80%, and 70% respectively. Feldman et al. [36] found that the overall survival rate for testicular cancer was more than 95%, but only 80% for metastatic disease.

Conclusions:

We conclude that the most common types of male genito-urinary malignancies included: bladder cancer, prostate cancer, kidney cancer, testicular cancer. The most common histo-pathological subtype in bladder cancer was transitional cell carcinoma, while in prostate cancer was prostatic adenocarcinoma, in kidney cancer was renal cell carcinoma and in testicular cancer was seminoma.

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