
Urological malignancies: one-year audit from a tertiary referral centre

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Abstract

Objective To study the clinicopathological characteristics of urological malignancies.

Patients and Method Newly diagnosed patients with urological malignancies in the year 2009 in a single urological unit of a tertiary referral centre were included in this retrospective study.

Results During the study period there were 35 patients with carcinoma of the bladder; 17 patients with carcinoma of the prostate; 9 patients with renal malignancy; 1 patient with synchronous transitional cell carcinoma of the bladder and upper urinary tract; 1 patient with seminoma of the testis. Median age of the patients with primary bladder carcinoma was 65 years (range 46-82 years). Majority of the patients with primary bladder cancer were males (3.1:1) and had non-muscle invasive bladder cancer (72.7%). All patients with primary bladder cancer except one had transitional cell carcinoma (97%). Median age of the patients with carcinoma of the prostate was 70 years (range 60-81 years). All patients with carcinoma of the prostate had advanced disease at presentation. Median age of the patients with renal cell carcinoma (RCC) was 65 years (range 53-72 years). There is a 1.3:1 predominance of men over women. 85% of renal cell carcinomas were conventional renal cell carcinomas.

Conclusion Multicentre long-term studies are required to ascertain the actual clinicopathological characteristics of urological malignancies.

Epidemiology of cancer depends on the population studied. The national cancer registry contains comprehensive cancer information for the whole population of a country. Regrettably, we do not have a national cancer registry in Sri Lanka. Herein we produce an audit of urological malignancies from a single urological unit in a tertiary referral centre.

Patients and method

This study was performed in a single urological unit of a tertiary referral centre. Newly diagnosed patients with histopathologically confirmed urological malignancies in the year 2009 were included in the study. The data were obtained retrospectively from the clinic notes and operation register.

Results

During the one year period 63 patients with urological malignancy were diagnosed. Table 1 shows the site of malignancy, the number of patients diagnosed and the sex distribution.

Table 1. Site of urological malignancy, number of patients and the sex distribution

Site of malignancy	Number of patients	Male	Female
Urinary bladder	35	25	10
Prostate	17	17	-
Kidney	9	6	3
Upper urinary tract and bladder	1	1	-
Testis	1	1	-

Out of 35 patients with bladder cancer 33 patients had primary bladder cancer and 2 patients had secondary bladder tumour from ovarian carcinoma. Median age of the patients with primary bladder carcinoma was 65 years (range 46-82 years). Majority of the patients with primary bladder cancer were males (3.1:1). Out of 33 patients with primary bladder carcinoma 24 patients (72.7%) had non-muscle invasive bladder carcinoma.

Pathological tumour stage and grade of non-muscle invasive bladder tumour are shown in Table 2. All non-muscle invasive bladder tumours except two pT1 high grade tumours had papillary configuration. All muscle invasive bladder tumours were solid and high grade. All the patients with primary bladder carcinoma had transitional cell carcinoma except the one who had poorly differentiated carcinoma. In one patient transitional cell carcinoma contained squamous and sarcomatoid components as well. Haematuria either painless or painful was the commonest presentation of bladder carcinoma (Table 3).

Table 2. Pathological stage and grade of non-muscle invasive bladder tumour

Pathological stage	Grade	No. of patients
pTa	Low Grade	9
	High Grade	1
pT1	Low Grade	8
	High Grade	6

Table 3. Clinical presentation of bladder cancer and number of patients

Presentation	No. of patients
Haematuria (painless/painful)	31
LUTS and haematuria	1
LUTS	1
UTI (no haematuria)	1
Lower limb swelling	1

All patients with carcinoma of the prostate had adenocarcinoma – small acinar type. Median age of the patients with carcinoma of the prostate was 70 years (range 60-81 years). Majority of patients presented with LUTS. Digital rectal examination (DRE) revealed clinically malignant prostate in 15 patients; equivocal prostate in 2 patients. One patient who had clinically malignant prostate and serum PSA of <1 µg/L showed aggressive disease (Gleason sum score 5b+5b) (Table 4). All patients with carcinoma of the prostate had advanced disease at presentation.

Table 4. Clinicopathological characteristics of prostatic carcinoma

No.	Age	Presentation	DRE	Serum PSA (ng/ml)	Gleason sum score
1	79	AUR	M	112	10 (5+5)
2	70	LUTS	M	82.3	7 (3+4)
3	63	LUTS	M	38	10 (5+5)
4	81	AUR	M	>100	8 (5+3)
5	62	LUTS	M	74.3	7 (3+4)
6	60	AUR	M	342	10 (5+5)
7	68	LUTS	M	NA	6 (3+3)
8	74	LUTS	M	5.5	10 (5+5)
9	74	LUTS	E	171	6 (3+3)
10	63	Hx	M	<1	10 (5+5)
11	65	AUR	M	103	8 (3+5)
12	65	LUTS	M	216	8 (5+3)
13	70	AUR	M	37.4	8 (3+5)
14	76	LUTS	M	NA	7 (3+4)
15	81	AUR	M	84	10 (5+5)
16	72	LUTS	M	201	9 (4+5)
17	73	LUTS	M	6.28	6 (3+3)

AUR – acute urinary retention, LUTS – lower urinary tract symptoms, Hx – haematuria, M – clinically malignant, E – clinically equivocal, NA – not available

Out of 9 patients with renal malignancy 7 patients had renal cell carcinoma (6 - clear cell, 1- unclassified type), one patient had mucinous tubular and spindle cell carcinoma of kidney and another one had poorly differentiated malignancy or neuroendocrine tumour. Patients with renal malignancy had a variety of clinical presentations (Table 5). Median age of the patients with RCC was 65 years (range 53-72 years). Among the 7 RCC patients 4 were males (male:females = 1.3:1). According to Robson’s staging 6 patients had stage I tumour, 1 patient had stage II tumour, 2 patients had stage IV tumour.

Table 5. Clinical presentation of renal malignancy and number of patients

Presentation	No. of patients
Abdominal pain	1
Abdominal pain and lump	2
Haematuria	2
Incidental	2
Pathological fracture	1
Fever and loss of appetite	1

The patient who had a testicular cancer was 45 years old; presented with scrotal lump, bilateral sacral pain and loss of weight. The tumour was a classic seminoma, stage II (AJCC staging system).

Synchronous bladder and upper urinary tract transitional cell carcinoma was found in a 68 year old male who had haematuria for 3 months.

Discussion

In USA, excluding basal and squamous cell skin cancers and in situ carcinoma except urinary bladder, carcinoma of the prostate is the number one cancer in males and constitute 25% of all cancers; cancers of urinary bladder and kidney and renal pelvis are the 4th and 7th leading cancers in males and constitute 7% and 5% of all cancers; cancer of the kidney and renal pelvis is the 8th leading cancer in females and constitute 3% of all cancers; cancer of urinary bladder has no place among the first ten leading cancers in females (1). In Sri Lanka, carcinoma of the prostate is the 8th leading cancer in males; other urological cancers have no place among the first ten leading cancers both in males and females (2). In this study, carcinoma of the prostate is less common than carcinoma of the bladder in males. Non inclusion of PSA based screening pT1c prostate carcinomas in this study contributed for this observation.

Bladder tumour was the number one malignancy in the study which was performed in the same unit for a 24-month period January 1994 to December 1995 (3). But, bladder tumours diagnosed for a year in this study were fairly less in number than the above study. An increase of urological surgeons in the country has probably contributed for this observation.

Bladder cancer is generally a disease of the middle-aged and elderly people, with the median ages at diagnosis for urothelial carcinoma being 69 years in males and 71 years in females (4). It is more common in males with a male-to-female ratio of 3.8:1 (5). More than 90% of bladder cancers are transitional cell carcinomas (6). At the initial diagnosis of bladder cancer, 70% of cases are diagnosed as non-muscle-invasive disease and 30% as muscle-invasive disease (7). All these findings were found in our study as well. However, the largest bladder cancer study which was performed in Sri Lanka by one of the authors revealed a sex ratio of male:female 6:1 and muscle invasive disease on initial presentation in nearly half of the patients (8). Further, in our study we found 18% of pT1 high grade tumours. This is also unduly high over the finding of 5.3% of pT1 high grade tumours in the above largest bladder cancer study. Differences in the study duration could have resulted in these disparities. Tumour configuration is an important prognostic variable. Papillary tumours tend to be of a low grade, earlier stages and exhibit less aggressive behavior than non papillary tumours (9,10). In this study 91% of non-muscle invasive bladder cancers had papillary configuration and all muscle invasive bladder cancers had solid configuration. The 8% of non-muscle invasive bladder cancers that showed non papillary configuration were pT1 high grade tumours. Haematuria is the presenting symptom of urothelial malignancy in 85% to 90% of cases but 10% never have haematuria (11). 6% of primary bladder cancer patients never had haematuria in this study.

Prostate cancer is rarely diagnosed in men younger than 50 years, accounting for less than 0.1% of all patients. Peak incidence occurs between the ages of 70 and 74 years, with 85% diagnosed after the age of 65 years (12). In prostate cancer, there has been a substantial shift to more favourable stage at presentation with newly diagnosed disease. This clinical stage migration is largely if not exclusively accounted for by PSA screening (13). Non palpable cancers (AJCC clinical stage T1c) now account for 75% of newly diagnosed disease (14). But all of our patients were symptomatic, had clinically malignant or equivocal prostate and advanced disease at presentation. Lack of awareness about the disease and PSA based screening for carcinoma of the prostate resulted in this late presentation. In this study one patient who had clinically malignant prostate and serum PSA of <1 µg/L showed aggressive disease (Gleason sum score 5b+5b). In clinical decision making relying on serum PSA

alone without DRE can lead to a disaster by missing an aggressive malignancy.

RCC shows a 1.5:1 predominance of men over women, with peak incidence occurring between 60 and 70 years of age (15). Renal cell carcinoma comprises different types with specific histopathological and genetic characteristics and 70%-80% are conventional RCC (16). All these findings were found in our study as well. Due to the increased detection of tumours by imaging techniques, such as ultrasound (US) and computerised tomography (CT), the number of incidentally diagnosed RCCs has increased. These tumours are more often smaller and of lower stage (17,18). In this study there were 2 incidentally found renal tumours (pT1a and pT1b).

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