Original Article

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# Presentation, Evaluation and Treatment of Urinary Bladder Tumour

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**ABSTRACT**

***Background:*** *Bladder carcinoma is the most common urological malignancy in Bangladesh. Nevertheless, the common presentations of the patient and their ongoing management system are yet to be evaluated. This study aimed to determine the clinicopathological characteristics of histologically confirmed bladder carcinoma at a tertiary care hospital of Dhaka, Bangladesh.*

***Materials and methods:*** *This was a cross sectional study. A total of 50 patients of bladder carcinoma were included in this study from the Department of Urology, Dhaka Medical College Hospital during May, 2017 to October, 2017. All patients were evaluated with regards to clinical presentation, cystoscopic findings and histopathological data.*

***Results:*** *The mean age was 63.78±9.79 years (Age range: 27-88 years) and 78% were male. Hematuria was manifested by 31(62%), 28% and 32%, respectively, showed urinary frequency and urgency and 22% patients were asymptomatic. Maximum 52% presented at T2 (T2 ❼ 5 year survival , 50-80% patients are cured by OT) which was followed by 30% T1a(T1a ❼ superficial muscle layer involvement). 82% had transitional cell carcinoma and rest 18% had non transitional cell carcinoma. Among the later varieties of bladder cancer, Squamous cell carcinoma was the highest - 10%.*

***Conclusion:*** *Bladder cancer has a varied spectrum of presentation and patients admitted in the hospitals generally have a higher stage and grade of disease.*

**Key words:** Bladder cancer; Clinicopathological characteristics; Urinary bladder.

## Introduction

Urinary bladder cancer is one of the most-common urological malignancies and among the leading causes of cancer deaths worldwide. Approximately 3.0% of all new cancer diagnosis and 2.1% of all cancer deaths are due to bladder cancer.[1] The high incidence, prevalence, mortality and recurrence rate of bladder cancer indicate that it remains an unsolved clinical and social problem. Two-thirds of patients present with non-muscle-invasive bladder cancer. Although current therapies can achieve a good prognosis, approximately 40% of these patients will progress to muscle-invasive disease after 5 years.[2-4] Moreover, the 5-year survival rate of muscle invasive bladder cancer is only 60%.[5]

Bladder cancer shows a male predominance with a sex ratio of 3 : 1.[1] The spectrum of bladder cancer is diverse, but the majority (nearly 90%) are urothelial tumours. The other tumours are squamous cell carcinoma, adenocarcinoma and rare varieties like small cell carcinoma. Clinical stage and grade are the two most important determinants of the prognosis of bladder cancer.[6] Previous studies show varying results in relation to sex ratio, proportion of muscle invasive disease and histological types of bladder cancer in neighbouring South Asian countries.[7-9]

In Bangladesh, bladder carcinoma is one of the top 10 malignancies in men and most common urological malignancy in both sexes. According to the latest WHO data published in 2020, bladder cancer deaths in Bangladesh reached 991 or 0.14% of total deaths. The age adjusted death rate was 0.84 per 100,000 population.[10] However, its clinicopathological features are not well described in the literature. Therefore the aim of this study was to identify the clinical and pathological characteristics of newly diagnosed and

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IAHS Medical Journal
Volume 07 Issue 02 December 2024; 25-29

histologically confirmed bladder cancer treated cases at a single urology unit of a tertiary hospital in Dhaka, Bangladesh.

**Materials and methods**

This cross-sectional study was conducted at Department of Urology, Dhaka Medical College Hospital, Dhaka, Bangladesh during May, 2017 to October, 2017. The study protocol was approved by the Ethical Review Committee of Dhaka Medical College and written informed consent was obtained from Individual patients.

All consecutive patients who underwent their first trans-urethral resection of bladder tumour in the unit were included in the study. Patients who were unfit for surgery or was transferred to ICU immediate after surgery were excluded from the study.

Data regarding sociodemographic characteristics (Age, sex, occupation, residential location and socioeconomic status) smoking behaviour, presenting symptoms, histopathological diagnosis, grading, tumour staging and treatment modalities used for the patients were recorded in a structured case-record form.

Data were presented as frequency and percentage for categorical data and mean and standard deviation for quantitative data. Only descriptive statistics were used to present the study findings.

**Results**

**Table I:** Sociodemographic characteristics of the patients (n=50)

| Variables | Frequency | Percentage (%) |
|---|---|---|
| **Age group (In years)** | | |
| ≤30 | 1 | 2.0 |
| 31 – 40 | 3 | 6.0 |
| 41 – 50 | 7 | 14.0 |
| 51 – 60 | 11 | 22.0 |
| 61 – 70 | 20 | 40.0 |
| >70 | 8 | 16.0 |
| **Sex** | | |
| Male | 39 | 78.0 |
| Female | 11 | 22.0 |
| **Occupation status** | | |
| Dye worker | 10 | 20.0 |
| Farmer | 14 | 28.0 |
| Shoe industry worker | 2 | 4.0 |
| Chemical industry worker | 12 | 24.0 |
| Business | 4 | 8.0 |
| Unemployed | 3 | 6.0 |
| Housewife | 5 | 10.0 |
| **Monthly family income** | | |
| < Tk.10,000 | 21 | 42.0 |
| Tk .10,000-25,000 | 25 | 50.0 |
| >Tk . 25,000 | 4 | 8.0 |
| **Residential location** | | |
| Urban | 31 | 62.0 |
| Rural | 19 | 38.0 |

A total of 50 patients were included in the study. The mean age was 63.78±9.79 years (Age range: 27-88 years). Table I shows that out of 50 patients , the highest 40% were from age group 61-70 years which was subsequently followed by 22% of 51-60 years age group. There was male predominance with a male to female ratio of 3.55:1. Regarding occupation, 14(28%) were farmers, 12(24%) were chemical industry worker and 10(20%) were dye worker. The least number of patients were shoe industry worker 2(4%) and housewife 5(10%). Thirty-one (62%) patients were from urban and suburb areas whereas rest 19(38%) patients were the dwellers of rural areas. Half of the patients had monthly family income of Tk .10,000-25,000 and another 42% had income < Tk. 10,000

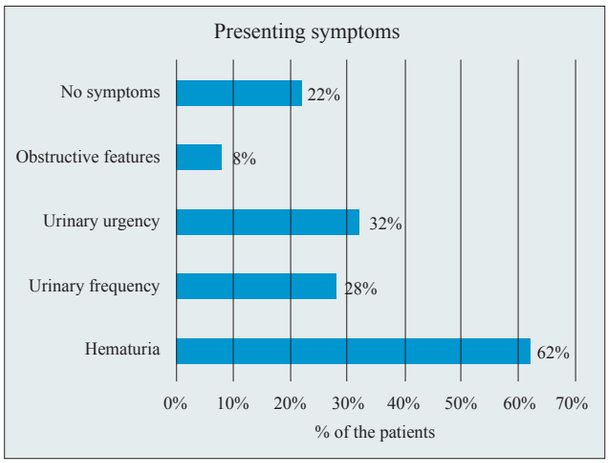


**Figure 1** Symptoms of the respondent patients ( n =50)

Out of 50 patients 40(80%) were smoker and 10 (20%) were non-smoker. Among the smokers, only one was female. Figure 1 shows that out of 50 patients, 31(62%) manifested Hematuria, whereas 28% and 32% showed urinary frequency and urgency respectively. Incidental diagnosis on ultrasonography was made in 22% of the patients

**Table II** Histopathological diagnosis, tumour grading and staging of the patients (n=50)

| Variables | Frequency | Percentage (%) |
|---|---|---|
| **Histological diagnosis** | | |
| Transitional Cell Carcinoma (TCC) | 41 | 82.0 |
| Squamous cell carcinoma | 5 | 10.0 |
| Adenocarcinoma | 3 | 6.0 |
| Anaplastic carcinoma | 1 | 2.0 |
| **Grading** | | |
| Grade-I (Slow growing, cancer cells look like normal bladder cells) | 8 | 16.0 |
| Grade-II ( Slightly faster growing , different from normal cells ) | 14 | 28.0 |

IAHS Medical Journal
Volume 07 Issue 02 December 2024; 25-29

| Variables | Frequency | Percentage (%) |
|---|---|---|
| Grade-III (very different from normal cells grow quickly ) | 28 | 56.0 |
| **T2 stage category** | | |
| $T_a$ Papillary tumour, no bladder wall involvement | 15 | 30.0 |
| T1 bladder wall involvement | 8 | 16.0 |
| T2 invades muscle | 26 | 52.0 |
| T3 involve renal pelvis | 0 | 0.0 |
| T4 involve adjacent organs | 1 | 2.0 |

The most frequent histopathological diagnosis was transitional cell carcinoma (82%) and rest 18% had non transitional cell carcinoma. Among the later varieties of bladder cancer, squamous cell carcinoma was the highest 10%. Table II shows that out of 50 patients maximum 52% presented at T2 which was followed by 30% $T_{1a}$.

It was depieted that 41 (82%) were transitional cell carcinoma, 28 (56%) belonged to grade III categories of tumour. Majority 26 (52 %) involved the muscle layers.

**Table III** Distribution of patients according to treatment modalities (n = 50)

| Treatment modalities | Frequency | Percentage (%) |
|---|---|---|
| **Ta-T1** | | |
| TURBT + Intravesical Mitomycin | 12 | 24.0 |
| TURBT + Intravesical BCG | 11 | 22.0 |
| **T2-T4** | | |
| Radical cystectomy | 9 | 18.0 |
| Radical cystectomy + removal of Pelvic lymph nodes | 14 | 28.0 |
| With/without | | |
| Neoadjuvant cisplatin based chemotherapy | 2 | 4.0 |
| Adjuvant chemotherapy | 1 | 2.0 |
| Concomitant chemotherapy and irradiation | 1 | 2.0 |
| Total | 50 | 100.0 |

TURBT: Trans usethral resection of bladder tumor.

Table III shows that the overall treatment modalities followed for the study patients' management. It was observed that total 23 (46%) patients received TURBT with intravesical chemotherapy or immunotherapy. On the contrary, rest 27(54%) received radical surgery as the prime treatment. This radical surgery was accompanied by neoadjuvant cisplatin based chemotherapy, adjuvant chemotherapy and concomitant chemotherapy and irradiation in respective cases.

**Discussion**

In this study, the peak age for bladder tumors was seen in the 6th decade of life and the mean age was 63.78 ± 9.79 years. In the study of Haque et al. maximum (58.0%) patients were below or equal to 60 years and 42.0% patients were more than 60 years old and mean age of the patients was 60.9 ± 13.1 which was similar to the present study.[11] In this study male to female ratio was found 4:1. Male were predominant and this study shows the incidence of tumor is more in male (78.0%) than female (22.0%), compared to the ratio of 3:1 quoted worldwide.[1] In India the male to female ratio is 5.25: 1.[7] In Sri Lankan this ratio was 4.1:1.[8] Overall, a higher male preponderance was observed in South Asian countries than described in the western countries.[12] Low prevalence of smoking among women in this region could be attributable for this difference.[13]

In the present study, 50% of the patients had monthly family income of Tk.10,000-25,000 and another 42% had income Tk. <10,000 . Regarding occupation, 28% were farmers, 24% were chemical industry worker, 20% were dye worker and 4% were shoe industry worker. Not only rapid industrialization and urbanization but also excess use of insecticide and fertilizer of the subcontinent particularly our country for the last few decades probably playing an important role for increasing incidence of urinary bladder carcinoma. Similar observation was also made by Haque et al. in Bangladesh.[11]

Majority of the patients (80%) were smoker in the present study and all of the male patients were smoker. Haque et al. from Bangladesh also observed similar high prevalence of tobacco use in their study, where most of the male patients in this study had habit of both cigarette and betel nut and females had habit of betel leaf with betel nuts.[11] Chinnasamy et al. revealed most of bladder cancer patients (71.2%) had smoking habit which was consistent with this study result.[14] Chou et al. found 24.9% of urothelial cancer patients had smoking habit.[15]

The most common presenting symptom of bladder cancer in the study was gross, painless total hematuria, seen in 62% of the patients. This finding is in agreement with two other studies.[7,8] Besides, urinary urgency and frequency, both of which are recognized as irritative bladder symptom; positioned after hematuria respectively with 32% and 28% figures.

The histologic cell type of bladder cancer is geographically different. In the subcontinent, urothelial carcinoma is the most common type. In the present study, 82% cases were histologically transitional cell carcinoma. Previous study conducted in Bangladesh by Haque et al. observed that 100% cases were TCC.[11] A related study conducted by the Urology Department of BSMMU in 1088 patients of ten different hospital of Dhaka city, observed 96.7% TCC, 1.2% squamous cell carcinoma, 1.6% adenocarcinoma and 0.5% other type

IAHS Medical Journal
Volume 07 Issue 02 December 2024; 25-29

of urinary bladder cancer.[16] In another study in Egypt by Shawky reported 43.8% squamous cell carcinoma followed by 40.6% TCC. Jemal et al. found that the endemic infection with Schistosoma species in Africa and Egypt was responsible for squamous metaplasia and subsequently squamous cell carcinoma in urinary bladder.[17,18]

Present study shows that poorly differentiated tumor (Grade-3) is most common among the study population (56%) which is subsequently followed by moderately differentiated bladder carcinoma (28%). Haque et al. in their study found that 72.0% patients had high grade and 28.0% patients had low grade urothelial carcinoma.[11] It indicates the advanced presentation of bladder cancer in this region. It may be due to the reason that study site is a tertiary care referral center.

The treatment modalities of bladder cancer vary from person to person and center to center. It was observed that total 23 (46%) patients received TURBT with intravesical chemotherapy or immunotherapy. On the contrary, rest 27(54%) received radical surgery as the prime treatment. This radical surgery was accompanied by neoadjuvant cisplatin based chemotherapy, adjuvant chemotherapy and concomitant chemotherapy and irradiation in respective cases.

**Limitation**

Sample size was small and the sample was selected from a single tertiary level hospital, which were two important limitations of the present study.

**Conclusion**

From findings of this study, urinary bladder cancer is mostly common among male and in 6th decade. Advanced stage like grade 3 and T2-T4 were highly common in Dhaka Medical College Hospital. Due to availability of its logistic supports and expertise, most of the referral cases present here.

**Recommendations**

A multi centered study is necessary for better understanding of the conditions in Bangladesh.

**Disclosure**

The authors declared no conflicts of interest.

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IAHS Medical Journal
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