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Original Research Article

Age-Wise Distribution of Patients with Urinary Bladder Carcinoma

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Abstract: ***Introduction:*** Bladder cancer is the fourth most common cancer in men accounting for 6.6% of all cancer cases in the world. In women, it is the ninth most common cancer accounting for 2.4% of all cancer cases. In our country the prevalence of bladder also seems to be increasing due to increasing number of aging people, increased exposure to carcinogens but unfortunately till today, there is no available data on prevalence of bladder cancer in our country. ***Aim of the Study:*** The aim of the study is to assess age-wise distribution of patients with urinary bladder carcinoma. ***Methods:*** This cross sectional study on 819 patients of carcinoma of urinary bladder was done in 10 different hospitals in Dhaka city. This study was carried out from January 2007 to December 2009. All specimen of bladder tissue that was sent for histopathological examination were included in the study. All specimen of bladder tissue that was sent for histopathological examination that reveals other diagnosis than cancer were excluded from the study. ***Results:*** A total of 1088 patients included in the study, out of which 819(75.3%) patients having carcinoma at 95% Confidence Interval (Cl) (72.7% to 77.8%) and rest 269(24.7%) others (Benign tumour, Tubercular cystitis, Chronic cystitis) at 95% Cl (22.2%-27.3%). According to histopathological report it was observed that 792(96.7%) transitional cell carcinoma (TCC) at 95% CL (95.5% to 97.9%), 10(1.2%) squamous cell carcinoma (SCC) at 95% Cl (0.5% to 2.0%), 13(1.6%) Adenocarcinoma at 95% Cl (0.7 to 2.4%) and 4(0.5%) Mixed type (Embryonal rhabdomyoscarcoma, Scarcomatoid Ca) at 95% Cl (0 to 1.0%). In traditional cell carcinoma (TCC) it was observed that nearly one third (31.7%) of the patients belonged to 61-70 years. In squamous cell carcinoma (SCC), most (40.0%) of the patients belonged to 41-50 years. Adenocarcinoma more frequent in 41-70 years age group and mixed type was found 2(50.0%) in 51-60 years age group and 2(50.0%) in 81-90 years age groups. It was observed that TCC were found 195(24.6%) and 597(75.4%), SCC was found 6(60.0%) and 4(40.0%), Adenocarcinoma was found 5(38.5%) and 8(61.5%) in <50 years and ≥ 50 years of aged patients respectively. It was observed that all of the patients had mixed type tumor were ≥ 50 years. ***Conclusion:*** Muscle invasive- advance stage ((T2, T3, T4) cancers were prevalent in 42.4% (95%CI=39.0-44.1) cases. High grade tumors were detected 54.8% (95% CI=51.4-56.5) cases, statistically significant difference was found in between SCC vs other cancers (p<0.05. TCC had the highest frequency. All the subtypes cancers were of more common in the male sex group than female, there was no statistically significant difference found in between the subtypes of cancers (p>0.05).

Keywords: Urinary Bladder Carcinoma.

INTRODUCTION

According to Stein Lieskovsky *et al*., (2001), bladder cancer is among the most prevalent cancers worldwide. The epithelium is the site of 95% of primary bladder tumors (Transitional, Squamous, Adenocarcinoma, and Mixed), while connective tissue is the site of 5% (Angioma, Myoma, Fibroma, and Sarcoma) [1]. According to Gh. Jeelani *et al*., (2005), 5% of epithelial tumors are squamous cells, 1% to 2% are adenocarcinomas, and over 90% are transitional [2]. With an estimated 273000 new cases and over 108,000 fatalities in 2002, bladder cancer is currently the seventh

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most frequent malignancy worldwide [3]. According to Adrian Vandar Meijden *et al*., (1998), bladder cancer ranks fourth in the US and fifth in Europe in terms of cancer incidence. In men, it contributes to 7% of new cancer cases, whereas in women, it accounts for 2% [4]. 65 is the average age at diagnosis. Approximately 75% of bladder malignancies at that time are confined in the bladder, while 25% have migrated to distant places or regional lymph nodes [5]. Bladder cancer was predicted to be the ninth most prevalent cause of cancer-related fatalities among American men in 2005, accounting for 13180 deaths (8970 men and 4210 women). 3.0% of all cancer-related deaths in men and 1.5% in women are caused by bladder cancer [6]. Cigarette smoking has been linked to an increased risk of bladder cancer during the previous 20 years [7]. In addition to other non-occupational risk factors, workers in a variety of industries were exposed to a variety of aromatic amines and the general aging of the population [8, 9]. In our nation, bladder cancer is not unusual. Unfortunately, there is currently no trustworthy data on the disease's prevalence. However, a study on the frequency of bladder cancer will be a significant advancement in this sector. It will benefit the nation's urologists, researchers, and health policymakers. In the planned study, which is a three-year retrospective observational study, the frequency of bladder cancer will be determined by gathering recorded data on bladder disease (histopathological diagnosis) from prominent Dhaka city clinics and hospitals. With a population of over 150 million, Bangladesh is a small country covering approximately 144000 square kilometers. Both the number of elderly persons and the amount of carcinogen exposure are growing daily. Bladder cancer is a condition that primarily affects older adults, and the number of cases is likely rising daily. The capital city of Dhaka is home to the majority of our nation. Dhaka is also home to many contemporary treatment facilities, including urological care. Therefore, it makes sense to believe that Dhaka City diagnoses and treats a significant percentage of bladder cancer cases from all across the nation. Therefore, the bulk of bladder cancer cases in the nation would be covered by data from esteemed public and private hospitals as well as urological centers in Dhaka city. As a result, this study will represent a significant percentage of bladder cancer cases and aid in forecasting the disease's total prevalence in the nation. The aim of the study is to assess age-wise distribution of patients with urinary bladder carcinoma.

METHODS

This cross sectional study on 819 patients of carcinoma of urinary bladder was done in 10 different hospitals in Dhaka city namely BSMMU, DMCH, SSMCH, NIKDU, BIRDEM, the Laboratory, Comfort Nursing home, Barakah Kidney Hospital and Diagnostic centre. United Hospital, Lab Aid Hospital, Dhaka. This study was carried out from January 2007 to December 2009. All specimen of bladder tissue that was sent for histopathological examination were included in the study. All specimen of bladder tissue that was sent for histopathological examination that reveals other diagnosis than cancer were excluded from the study.

RESULTS

Table 1: Distribution of the whole study patients (n=1088)

Disease name	Number of patients (n)	Percentage (%)	Cl (95%) (Lower-Upper)
Carcinoma	819	75.3	72.7-77.8
Others	269	24.7	22.2-27.3
Total	**1088**	**100**	

A total of 1088 patients included in the study, out of which 819(75.3%) patients having carcinoma at 95% Confidence Interval (Cl) (72.7% to 77.8%) and rest 269(24.7%) others (Benign tumour, Tubercular cystitis, Chronic cystitis) at 95% Cl (22.2%-27.3%).

Table 2: Distribution of the patients by histopathological diagnosis (n=819)

Histopathological Diagnosis	Number of patients (n)	Percentage (%)	Cl (95%) (Lower-Upper)
TCC	792	96.7	95.5-97.9
SCC	10	1.22	0.5-2.0
Adeno Ca	13	1.58	0.7-2.4
Mixed	4	0.48	0.0-1.0
Total	**819**	**100**	

According to histopathological report it was observed that 792(96.7%) transitional cell carcinoma (TCC) at 95% CL (95.5% to 97.9%), 10(1.2%) squamour cell carcinoma (SCC) at 95% Cl (0.5% to 2.0%), 13(1.6%) Adenocarcinoma at 95% Cl (0.7 to 2.4%) and 4(0.5%) Mixed type (Embryonal rhabdomyoscarcoma, Scarcomatoid Ca) at 95% Cl (0 to 1.0%).

Table 3: Distribution of the patients by age (n=819)

Age	TCC (n)	Percentage (%)	SCC (n)	Percentage (%)	Adeno Ca (n)	Percentage (%)	Mixed type (n)	Percentage (%)	Total (n)	Percentage (%)	CI (95%) (Lower-Upper)
10-20	2	0.3	0	0	0	0	0	0	2	0.2	0-0.5
20-30	30	3.8	0	0	0	0	0	0	30	3.7	2.4-4.4
30-40	42	5.3	2	20	1	7.7	0	0	45	5.5	3.9-6.3
40-50	121	15.3	4	40	4	30.8	0	0	129	15.8	13.3-17.4
50-60	207	26.1	2	20	4	30.8	2	50	215	26.3	23.3-27.8
60-70	251	31.7	2	20	4	30.8	0	0	257	31.4	28.2-33.0
20-30	110	13.9	0	0	0	0	0	0	110	13.4	11.1-14.6
80-90	29	3.7	0	0	0	0	2	50	31	3.8	2.5-4.5
Total	**792**	**100**	**10**	**100**	**13**	**100**	**4**	**100**	**819**	**100**	

Median age group=50-60 years of age

In traditional cell carcinoma (TCC) it was observed that nearly one third (31.7%) of the patients belonged to 61-70 years, followed by 207(26.1%) between 51-60 years, 121(15.3%) between to 41-50 years, 110(13.9%) between to 71-80 years, 42(5.3%) between to 31-40 years, 30(3.8%) between to 21-30 years, 29(3.7%) between to 81-90 years and 2(0.3%) between to 10-20 years. In squamous cell carcinoma (SCC), most (40.0%) of the patients belonged to 41-50 years. Adecarcinoma more frequent in 41-70 years age group and mixed type was found 2(50.0%) in 51-60 years age group and 2(50.0%) in 81-90 years age groups.

Table 4: Age distribution of the patients by TCC, SCC, Adenocarcinoma, Mixed Type vs other cancers (n=819)

Age	Number of patients (n)	Percentage (%)	Others (n)	Percentage (%)	CI (95%) (Lower-Upper)	P Value
TCC (n=792)						
<50	195	24.6	11	40.7	21.6-27.6	0.057^{ns}
≥50	597	75.4	16	59.3	72.4-76.9	
SCC						
<50	6	60	200	24.7	29.6-75.5	0.010^{s}
≥50	4	40	609	75.3	9.6-55.5	
Adeno Ca						
<50	5	38.5	201	24.9	12.0-52.0	0.264^{ns}
≥50	8	61.5	605	75.1	35.0-75.0	
Mixed Type						
<50	0	0	206	25.3	0.0-0.0	0.245^{ns}
≥50	4	100	609	74.7	100.0-100.0	

S= Significant
NS=Not Significant
P value reached from chi square test
Chi square value=3.6, degrees of freedom=1, p value=0.057
Chi square value= 6.53, degrees of freedom= 1, p value= 0.010
Chi square value= 1.24, degrees of freedom= 1, p value= 0.264
Chi square value= 1.35, degrees of freedom= 1, p value= 0.245

It was observed that traditional cell carcinoma (TCC) were found 195(24.6%) and 597(75.4%) in <50 and ≥50 years of aged patients respectively. Other tumor was found 11(40.7%) in <50 years and 16(59.3%) in ≥50 years of aged patients. Chi square test was done but significant (p>0.05) difference was not found between TCC and others. It was observed that squamous cell carcinoma (SCC) was found 6(60.0%) and 4(40.0%) in <50 years and ≥ 50 years of aged patients respectively. However, other tumor was found 200(24.7%) in <50 years and 609(75.3%) in ≥ 50 years of aged patients. Chi square test was done and statistically significant (p<0.05) difference was found between SCC and other cancers. It was observed that Adenocarcinoma was found 5(38.5%) and 8(61.5%) in <50 years and ≥ 50 years of aged patients respectively. However, other tumor was found 201(24.9%) in <50 years and 605(75.1%) in ≥ 50 years of aged patients. Chi square test was done and

statistically significant (p<0.05) difference was found between Adenocarcinoma and other cancers. It was observed that all of the patients had mixed type tumor were ≥ 50 years. However, other tumor was found 206(25.3%) in <50 years and 605(75.1%) in ≥ 50 years of aged patients. Chi square test was done and statistically significant (p<0.05) difference was not found between Adenocarcinoma and other cancers.

DISCUSSION

Urinary bladder cancer is one of the most common cancers world wide, with the highest incidence in industrialized countries. Age standardized incidence rates higher than 40 per 100,000 for males were reported from Europe (Belgium, 42.5; Italy, 41.0). In most European countries, the United States, and Canada, rates are between 20 and 30. Bladder cancer incidence is lowest in Asia South America, approximately 70% lower than in Western industrialized countries. Marked variation in bladder cancer incidence occurs not only between but also within countries. Italy, which had one of the highest rates for males world wide (41.1 in Genua province), also had a rate of 27.9 in Ragusa province. Because of its high recurrence rate, the actual prevalence of active bladder cancer is estimated to be about 10 times the number of new cases [1]. A total of 1088 patients included in the study, out of which 819(75.3%) patients having carcinoma at 95% Confidence Interval (Cl) (72.7% to 77.8%) and rest 269(24.7%) others (Benign tumour, Tubercular cystitis, Chronic cystitis) at 95% Cl (22.2%-27.3%). Ohio cancer incidence surveillance system (OCISS - from 1999 to 2003) reported cancer of the urinary bladder made up 4.8 percent. According to histopathological report it was observed that 792(96.7%) transitional cell carcinoma (TCC) at 95% CL (95.5% to 97.9%), 10(1.2%) squamour cell carcinoma (SCC) at 95% Cl (0.5% to 2.0%), 13(1.6%) Adenocarcinoma at 95% Cl (0.7 to 2.4%) and 4(0.5%) Mixed type (Embryonal rhabdomyoscarcoma, Scarcomatoid Ca) at 95% Cl (0 to 1.0%). Median age group=50-60 years of age. In traditional cell carcinoma (TCC) it was observed that nearly one third (31.7%) of the patients belonged to 61-70 years, followed by 207(26.1%) between 51-60 years, 121(15.3%) between to 41-50 years, 110(13.9%) between to 71-80 years, 42(5.3%) between to 31-40 years, 30(3.8%) between to 21-30 years, 29(3.7%) between to 81-90 years and 2(0.3%) between to 10-20 years. In squamous cell carcinoma (SCC), most (40.0%) of the patients belonged to 41-50 years. Adecarcinoma more frequent in 41-70 years age group and mixed type was found 2(50.0%) in 51-60 years age group and 2(50.0%) in 81-90 years age groups. The median age of bladder cancer patients showed marked variation between countries, the median age at diagnosis of urinary bladder cancer occurred in the 70 to 74 years age group, for both males and females, urinary bladder cancer incidence rates increased with advancing age group (for age 30 and older) among both males and females (ohio cancer incidence surveillance system, 2006). For both sexes, the youngest median age was that of Egyptian (61.6 years), followed by Jordanians 62.2 years), median age Cypriots, and US SEER were all in the 70s (statistics of Egypt, Jordan and US SEER 1996-2001). In the present series, carcinoma of urinary bladder the median age group 50- 60 years. Statistically significant (p0.05) difference was found between SCC and other cancers in <50 years and ≥50 years of aged patients. This present series and Arab populations (Egyptian, Jordanians) were relatively young compared with US SEER. This relatively low median age populations, with 50% younger than age 60 years, has serious public health implications due to reproductive years of life lost due to bladder cancer. For urinary bladder cancer, the two most common histological subgroups that make up more than 90 percent of all histological. These are transitional call carcinoma, not other wise specified and papillary transitional call carcinoma attached by stalks and have a wart like appearance have a better prognosis than those diagnosed with non papillary urinary bladder cancers. For both males and females, incidence rates of TCC, NOS (Not Otherwise Specified) of the urinary bladder are less then half those of papillary TCC (SEER 2006). For TCC the ASR for both sexes together showed marked variation between registries. The highest rate was that of Israeli Jews (13.5) almost double the lowest rate (Jordanians 6.9), The US, SEER rate was 11.5 (rates per 100,000, MECC and US SEER 1999-2001). In Kashmir histology of operated specimens showed that 98% of the patents were having TCC, 2% had adenocarcinoma (arising from urachus), No patients had SCC.[2] Bladder cancers in Malawi have features similar to these from other areas of Africa and the Middle East endemic of S. haematobium, most were SCC 80.1%, only 6.2% were TCC [10]. In this series TCC 96.75% (95% CI=95.5-97.9), SCC 1.22% (95% CI=0.5-2.0), Adencarcinoma, 1.58% (95.5CI -0.7-2.4), Mixed type 48% (95.5CI=0.0-1.0), which is nearly similar with Kashmir and SEER (2006). It is an another important determinant of survival, it represents aggressiveness of tumor to progress higher stage or tumor recurrence. In kasmir 42% of the patients had well differentiated (Grade-1), 30% had moderately well differentiated (Grade 2) tumours and only 22% had poorly differentiated tumors. That is mostly the growths are well differentiated [2]. In Malawi bladder cancer were mostly well to moderately differentiated [10]. It was observed that traditional cell carcinoma (TCC) were found 195(24.6%) and 597(75.4%) in <50 and ≥50 years of aged patients respectively. Other tumor was found 11(40.7%) in <50 years and 16(59.3%) in ≥50 years of aged patients. Chi square test was done but significant (p>0.05) difference was not found between TCC and others. It was observed that squamous cell carcinoma (SCC) was found 6(60.0%) and 4(40.0%) in <50 years and ≥ 50 years of aged patients respectively. However, other tumor was found 200(24.7%) in <50 years and 609(75.3%) in ≥ 50 years of aged patients. Chi square test was done and statistically significant (p<0.05) difference was found between SCC and other cancers. It was observed that Adenocarcinoma was found 5(38.5%)

and 8(61.5%) in <50 years and ≥ 50 years of aged patients respectively. However, other tumor was found 201(24.9%) in <50 years and 605(75.1%) in ≥ 50 years of aged patients. Chi square test was done and statistically significant ($p<0.05$) difference was found between Adenocarcinoma and other cancers. It was observed that all of the patients had mixed type tumor were ≥ 50 years. However, other tumor was found 206(25.3%) in <50 years and 605(75.1%) in ≥ 50 years of aged patients. Chi square test was done and statistically significant ($p<0.05$) difference was not found between Adenocarcinoma and other cancers. In this present series the most common grade at diagnosis high grade about 54.8% (95% CI -51.4-56.5), low grade 30.5% (95% CI -27.3- 33.7) and grade not done in 14.7% (95% CI = 12.3-15.9) of cases. Statistically significant difference was found in between SCC vs other cancers ($p<0.05$). In western countries, 55% to 60% of all newly diagnosed bladder cancers are well differentiated or moderately differentiated, superficial. 40 to 45 percent of newly diagnosed bladder cancers are high grade lesions, more than half of which are muscle invading or more extensive at the time of diagnosis. The preponderance of clinical evidence still would dictate that TCC has two major variants, low grade and high grade, which can be determined by routine cystoscopic examination, TUR, and histopathologic analysis [6].

Limitations of the Study

The study was conducted in a single hospital with a small sample size with limited access in the hospital. So, the results may not represent the whole community.

CONCLUSION

In Bangladesh bladder cancer is one of the common cancer, the median age group 50-60 years of age, is younger than in the west. TCC had the highest frequency. Probably the late stage presentation is due to lack of health awareness of the patients and medical professionals.

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Conflict of Interest: None declared

Ethical Approval: The study was approved by the Institutional Ethics Committee.

RECOMMENDATION

A large scale prospective study involving all the hospitals of the country should be done to find out the actual prevalence of the disease in the country. Efforts toward smoking control and respecting the right of nonsmokers must be intensified and exposure to carcinogen should avoid. Patient having symptoms of urinary bladder consult to your doctor. National cancer registry should open and ensure reporting throughout the country.

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