

Clinicopathological Features of Patients with Bladder Cancer in a Hospital Unit in Yazd, Iran

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ABSTRACT

Background and Aim: Bladder cancer is the tenth most common cancer in the world and the fourteenth cause of death in the world. The aim of this study is to investigate the clinical and pathological characteristics of patients with bladder cancer. **Methods:** Patients diagnosed with bladder tumor from 2014 to 2021 were selected. Clinical characteristics including size, location, morphology, stage and grade of tumor and demographic information including age, sex and smoking were extracted from patients' files. The survival rate of the patient until the study time or until death was recorded. **Results:** The results showed that the average age of the patients was 61 years and the male to female ratio was 4.4. The prevalence of smoking (45%) and opium (36.4%) was observed. The most common location of the tumor was the right side of the bladder (43.6%) and the left side (37.7%), and the most common histopathology observed was transitional cell carcinoma (84.4%). The follow-up results of the patients showed that 18% died due to the disease and 4.9% died due to another cause. 23.6% continued to live despite the disease and 36% showed no signs of disease during the follow-up period. **Conclusion:** The results showed that regular follow-up of patients and accurate recording of their information, as well as improving uropathology skills can help increase insight into bladder cancer in the future.

Keywords: Bladder tumor, Clinicopathological features, Demographic, Survival rate.

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INTRODUCTION

Today, one of the main problems of the health community is cancer, which is currently known as the second leading cause of death in the world.^[1] Common treatments include radiotherapy and chemotherapy that stop the cell cycle through apoptosis or non-apoptosis mechanisms such as necrosis.^[2] In Iran, Bladder cancer is the fourth most common malignancy that consists of non-invasive and invasive tumors, and the medical and surgical management of patients with this cancer requires high costs.^[3] The incidence of bladder cancer in men is 11 cases per 100,000. The level of steroid hormones, smoking, genetic differences, social position, geographic region, occupational injuries are important factors in the development of bladder cancer.^[4] Tumor characteristics and grade are largely needed to guide treatment and predict the outcome of bladder cancer treatment.^[5] In addition, the type of histology is another important factor that should be considered in relation to bladder cancer.^[6] About 95%

of tumors are of epithelial origin and Transitional Cell (urothelial) Carcinoma (TCC) is the most common primary tumor of this organ, accounting for about 90%.^[7] One of the common treatments for bladder tumors for advanced transitional cell carcinoma and treatment-resistant cases of high-grade recurrent transitional cell carcinoma is radical cystectomy.^[8] Of course, this method also has high side effects, because it leads to many changes in the quality of life, including sexual and social functions. In addition, in 2014, a modified method of radical cystectomy with prostate and seminal vesicle reduction was introduced in selected patients with bladder cancer.^[9] Understanding the clinical properties of the pathology of bladder cancer patients leads to a better understanding of the factors contributing to the disease and the prevalence of the disease in different societies. According to the available statistics in Iran, the incidence of bladder cancer is increasing, and knowing the characteristics of this disease can be very helpful in treatment and prevention. Considering the importance of bladder cancer in terms of its complications and mortality, as well as the financial burden it imposes on the healthcare system, this study aims to identify the clinical and pathological consequences of bladder cancer in patients referred to Shahid Rahneemoon Hospital in Yazd between 2014 and 2021.



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MATERIALS AND METHODS

All patients referred to Shahid Rahneem Hospital, Yazd, diagnosed with bladder tumor from 2014 to 2021. Clinicopathological data (size, location, morphology, frequency, stage, tumor grade, etc.), epidemiological data (age, gender, and smoking habit) were entered in the standard data collection sheet. Histopathology results were recorded exactly as reported in the notes reported by different pathologists. Tumors were histologically graded and its pathological stage classified according to the World Health Organization (WHO) and TNM system/International Society of Urological Pathology classification of urothelial (transitional cell) neoplasms of the bladder. The survival rate of patients was also recorded. This study has been approved by the Ethics Committee of Shahid Sadoughi University of Medical Sciences, Yazd, Iran.

RESULTS

Four hundred and fifty patients were included in the study. Their average age was 61 years. 18% were women and 82% were men, and the ratio of male to female was 4.4. Smoking (45%) and opium (36.4%) were recorded as the most common risk factors. The most common location of the tumor was on the right side of the bladder with 43.6% and the left side with 37.3%. The highest rate of tumor invasion was observed in the lamina propria at the rate of 43.8%, of which 48.2% showed low grade and 36% showed high grade (Table 1). Of all patients, 44.4% had tumor recurrence, 45.5% had one tumor recurrence, and 24.5% had two tumor recurrences. In terms of histopathology, transitional cell carcinoma showed the highest prevalence among patients with 84.4%. Papillary tumor pattern with 47.6% was the highest type among other patterns (Table 2). The results of the follow-up of the patients showed that 18% of the patients died due to the disease, 23.6% were still alive despite the disease and 36% did not have any evidence of the disease during the follow-up period, and 4.9% died due to factors other than the disease (Table 3). Also, 281 patients had one mass and 169 patients had multiple masses. hematuria occurred in 81.1% and after that, urinary obstruction was reported in 46% as the most common symptoms of bladder cancer.

DISCUSSION

Epidemiological investigation and recognition of clinicopathological factors of different diseases including cancer in different regions can be effective in clarifying different aspects of the disease. When the results of different studies have common patterns, it is possible to understand which factors are more involved in causing the disease. In the case of bladder cancer, past cross-sectional studies have identified the role of a number of factors such as age, gender, and addiction. The results of the present study showed that the average age patients at the time of diagnosis was 61 that these results are consistent with the

Table 1: Clinicopathological features of the bladder cancer patients.

Variables (n=450)	n (%)
Age, year	
Female	61.1
Male	60.6
Sex	
Female	83 (18.4)
Male	367 (81.6)
Addiction	
Smoking	202 (45)
Opium	64 (36)
Type of pathology	
TCC	390 (85)
SCC	10 (3)
Adenocarcinoma	5 (2)
Others	45 (10)
Early manifestations	
Anemia	3 (0.6)
Urinary retention	31 (7)
Hematuria	365 (81)
Fever	9 (2)
Urinary obstruction symptoms	211 (46)
Grade	
Low	217 (48)
High	162 (36)
Invasion	222 (49.6)
Lamina propria	197 (43.8)
Muscle	78 (17.3)
Lymphovascular	55 (12.2)
Perinodal	18 (4)
Extravesical invasion	17 (3.8)
Method of treatment	
MMC	7 (1.6)
BCG	33 (7.3)
RC	55 (12.2)
PC	4 (0.9)
Chemotherapy	17 (3.8)
Radiotherapy	4 (0.9)
Only TURBT	330 (73.3)
Tumor pattern	
Papillary	214 (47.6)
Nodular	29 (6.4)
Infiltrative	7 (1.6)
Not report	200 (44.4)

Table 2: Frequency distribution of tumor subtypes in all patients.

Mass type	Pathology	Number	%
Inflammatory lesions	Polypoid cystitis	4	0.2
	Inflammatory cystitis	26	0.2
	Eosinophilic cystitis	10	0.2
	Follicular cystitis	1	0.2
	Cystitis cystic	1	0.2
	Cystitis glandularis	1	0.2
Benign tumor	Leiomyoma	1	0.2
	Chondroma	1	0.2
	Inverted papilloma	1	0.2
	Fibroepithelial polyp	3	0.7
Malignant tumor	TCC	382	84.9
	SCC	9	2
	Adenocarcinoma	5	1.1
	Anaplastic	1	0.2
	Papilloma	1	0.2
Not reported		3	0.7
Total		450	100

Table 3: Frequency distribution of patients' follow-up and survival rate of patients with bladder cancer.

Follow up	number	%	Mean (month)	SD
AWD	106	23.6	33.86	28
DOD	81	18	27.28	20.94
DOC	22	4.9	39.24	24.22
NED	162	36	43.6	23.63
Missed data	79	17.6	-	-
Total	450	100	-	-

DOD: Died of disease, DOC: Died of other causes, AWD: Alive with disease, NED: No evidence of disease.

results of previous studies. In a study was conducted by Parajuli *et al.*, it was determined that the average age of patients was 65.6 years^[10] and in Kong *et al.* study it was calculated 65 years old.^[11] In other studies, the average age of patients was 62.5^[12] and 64.2^[13] and 64.7 years^[14] which shows that the average age in Iran and the world is not significantly different. In the present study, 83 patients were female (18.4%) and 367 patients were male (81.6%), and the ratio of male to female was 4.4. This ratio is different other investigations for example, it was 9.4 in Kong *et al.*'s study^[11] and 4.3 in another study in India.^[15] This ratio has varied between 4 and 6.9 in different provinces of Iran and between 3 and 6.3 in 25 countries of the world.^[16] Therefore, according to these results, it is clear that most patients are men over 60 years old and age and gender are two determining factors. Among the possible reasons for the high number of men, we can point out more smoking and more exposure of men to carcinogenic substances, which with the increase of smoking in women and more occupational exposure

of women over time, we see a decrease in this ratio.^[17] Among the studied patients, 45% smoked cigarettes and 36.4% used opium. Smoking and occupational exposure to different chemicals are the most common factors related to bladder cancer, and various studies have emphasized the role of tobacco and smoking in causing bladder cancer.^[18] Parajoli *et al.*, a significant relationship between smoking and bladder cancer was observed.^[10] The presence of carcinogenic compounds in cigarettes and the increase in oxidative stress caused by them increase the prevalence of all types of cancers.^[19] The results of our study also showed that the most common type of bladder tumor was TCC. These results are consistent with the results of other researchers' studies. In Kong *et al.*'s study, 90.4% of TCC cases were reported.^[11] In another study conducted in the Kurdistan province of Iran, the rate of TCC type bladder cancer was reported in 97.9% of cases.^[20] Parajuli *et al* found that TCC accounts for more than 90% of bladder cancers.^[10] Transitional cell carcinoma is the most

common type of bladder cancer, which is similarly reported in 90% of cases worldwide. Also, the results of this study are similar to those reported in England and the United States, and in all studies it has been shown that the rate of TCC bladder cancer is higher than other types.^[21] In the diagnosis of the disease, the initial clinical manifestations of the disease play an important role. Hematuria occurred in 81.1% and after that, urinary obstruction was reported in people 46% as the most common symptoms of bladder cancer. In other studies, it has been reported that the level of hematuria in most of both women and men with bladder cancer is very high and up to 97% of patients have this symptom.^[22] The muscle invasion of tumor has been reported differently in different studies. Kong *et al* reported lamina propria involvement in 20%, muscle involvement in 10.7%, surrounding fat involvement in 12%, and organ involvement in 18.7%.^[11] The survival rate of patients is different in different countries and it varies depending on the level of care and treatment methods and the health level of the society. According to the latest research conducted in Iran, the incidence rate of bladder cancer is about 115-1.6 and the mortality rate is 0.5-0.84, and its prevalence in the Iranian population is between 4.10 and 12.8.^[23]

CONCLUSION

Patients with bladder cancer referred to medical centers in Yazd have the same risk factors known in other regions. Age over 60 years, gender and smoking and opium use are the main factors that should be taken into account in the prevention and control of the disease.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ABBREVIATIONS

TCC: Transitional Cell Carcinoma.

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