Review of Smoking Cessation and Bladder Cancer

N. Balan-Bernstein¹, D. Balan², C. Mărginean¹, O. Mártha²

¹ Pulmonology Clinic, Mureș County Clinical Hospital, Târgu-Mures, Romania
² Urology Clinic, Mureș County Clinical Hospital, Târgu-Mures, Romania

Abstract

Bladder cancer is a significant health problem worldwide. The most important risk factor for bladder cancer is prolonged exposure to carcinogens, especially cigarette smoke. By understanding the risk factor represented by smoking for this disease we could improve early detection and prevention.

The continuation of smoking after a cancer diagnosis is associated with worse outcomes. Bladder cancer management should also include individualized smoking cessation counseling.

Despite smoking is a well-known risk factor in the development and recurrence of bladder cancer counseling and knowledge in the area are insufficient. Every healthcare specialist must raise awareness regarding the greatest preventable cause of the development and recurrence of bladder cancer.

Key-words: bladder cancer, smoking cessation, recurrence

Correspondence to: Dr. Balan Daniel M.D.
Mures County Clinical Hospital
Str. Gh. Marinescu Nr 1, Targu Mures, Romania
Tel / Fax: +40743186942
e-mail: balan_dani@yahoo.com
Introduction
Bladder cancer is one of the most common urologic malignancies worldwide. The incidence of the disease is higher among men than in women. The rate of 5-year survival did not show any significant change in the last 30 years. The most important risk factor of bladder cancer is prolonged exposure to carcinogens, especially cigarette smoking. (1)

At first presentation of patients, 75% of bladder tumors are non-muscle-invasive (Ta, T1, CIS), and usually have a good prognosis. Approximate 30-80% of tumors show recurrence and 1-45% progress to a muscle-invasive tumor (T2) over 5 years. (2)

The treatment of bladder tumors has three major objectives: 1. eradication of existing tumor, 2. prophylaxis of tumor recurrence, and 3. preventing disease progression. (3)

Bladder cancer is a significant health problem worldwide, so understanding the risk factors for this disease would improve prevention and early detection. (4–6)

Purpose
The main objective of this review is the analysis of current epidemiological data in the development of bladder cancer and thus, correlation with smoking habits.

An early diagnostic approach and a multidisciplinary team are mandatory in order to successfully treat patients with bladder cancer. The importance of the current consensus for the management of bladder cancer and smoking cessation should be emphasized.

Methods
PubMed database was searched for recent reports, not older than 10 years which analyze the association of smoking habits with bladder cancer. We reviewed the available studies on smoking cessation and bladder cancer.

Smoking Cessation Programs
The relationship between smoking and the appearance of numerous malignancies is well documented. Decreased overall and cancer-specific survival and increased risk of cancer recurrence, treatment toxicity, secondary malignancy, depression, stress, and reduced quality of life are generally accepted. (7)

The support of smoking cessation is of utmost importance. The continuation of tobacco smoking after malignancy diagnosis is associated with worse outcomes. Several factors contribute to the success of smoking cessation: anxiety, depression, and insomnia. (8)

Smoking cessation interventions should be a part of the standard oncologic treatment of bladder cancer and could involve individualized counseling programs.

A diagnosis of bladder cancer should be a motivating factor to quit smoking in conjunction with smoking cessation programs. Smoking cessation could present a real challenge for cancer patients, taking into account the fear of recurrence which is associated with relapse, as are anxiety, depression, urge for a cigarette, stress, and medical comorbidities. In addition, it is unclear whether the efficacy of smoking cessation interventions designed for the general population would be similar in a cancer patient population. (9,10)

The current smoking cessation programs were designed for the general population and might have to be customized for bladder cancer patients, who could be experiencing unique physical limitations. (11)

Discussions
The relationship between smoking and increased risk of BCa recurrence is widely studied. Moreover, smoking is associated with poor responses to neoadjuvant chemotherapy. Smoking cessation mitigates these negative effects. The amount of patient counseling provided regarding this important matter and patient knowledge regarding smoking and BCa risk is insufficient. Currently, the impact of secondhand smoke on BCa risk remains uncertain. (12)

Evidence that smoking cessation at first diagnosis on BCa reduces the risk of recurrence is lacking. (13)

The majority of newly diagnosed patients with bladder cancer are male, which is thought to be related to an increased rate of smoking and occupational exposure. (14)

A multicentric study conducted in Romania concluded that providing smoking cessation for free had a positive long-term impact on program participants, even if there was no intermediary contact between the 3 months and the 12 months follow-up. (15)

Bladder cancer can be categorized as non-muscle-invasive bladder cancer (NMIBC) or muscle-invasive bladder cancer (MIBC), with the majority of newly diagnosed patients having NMIBC (70% to 85%). This is an important distinction, as NMIBC allows the patient bladder-sparing options for cancer management. (16)

Tobacco smoking is responsible for approximately half of BCa cases and is associated with poor oncologi-
cal outcomes for both NMIBC and MIBC. Despite smoking being a well-known risk factor, counseling and knowledge in this area are insufficient. Appropriate smoking cessation interventions and patient information are required to improve patient health and optimize BCa survival.\(^{(1,2)}\)

Advanced age, male sex, and cigarette smoking contribute to the development of bladder cancer.\(^{(1,7)}\)

**Conclusions**

BCa is a significant health problem, and understanding the risk factors for this disease could improve prevention and early detection.

Despite smoking is a well-known risk factor in the development and recurrence of bladder cancer counseling and knowledge in the area are insufficient and the need for further studies is undeniable. Smoking cessation may improve the prognosis of BCa patients. Every healthcare specialist must raise awareness regarding the greatest preventable cause of the development of bladder cancer.

There is a limited number of studies analyzing smoking cessation interventions included prospectively, as well as studies, lack on quit rates post-diagnosis of BCa; and therefore the need for further investigation is mandatory. Smoking cessation should be routinely included in urological oncology practice.

**References**