Awareness of Bladder Cancer Relation with Smoking, a Major Risk Factor

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ABSTRACT:
OBJECTIVE:

To study the knowledge, attitude and practices regarding the relationship between smoking and bladder cancer.

BACKGROUND:

Urothelial bladder cancer is the second most common malignancy and in 90% of the cases smoking is attributable for it. Since the global burden of cancer is rising mainly due to aging and growing population and behavioral adaptation to most avowed risk factors like cancer-associated lifestyle, notably smoking and “westernized” diets.

RESULT:

Out of 384 participants 40.9% (n=157) were males 30.2% (n=116) were females. Only 7.3% (n=28) had awareness about smoking can cause bladder cancer, though 96.9% (n=372) considered cancer can be lethal for their lives.

CONCLUSION:

In the present study, majority of the surveyed individuals were unaware of the relationship between cigarette smoking and bladder cancers. We emphasize on addressing the primary prevention, smoking cessation programs and awareness campaigns against bladder cancer as lack of knowledge about the risks and signs of bladder cancer prone to misdiagnosis, delayed diagnosis, limits the treatment options, and ultimately worsens the prognosis.

KEYWORDS: Urothelial bladder cancer; Smoking; Tobacco related malignancy; Awareness; Campaigns against bladder cancers
INTRODUCTION:

Medical literature has shown a momentous rise in morbidity and mortality due to urothelial bladder cancer. It has been ranked at 7th position for the most common cancers among men and 17th among females worldwide. A European based statistics has documented a mortality of approximately 38 200 in the European Union and 17 000 in US each year. Every year there are 110 500 newly diagnosed cases in men and 70 000 in women by Maximilian Burger et al (1).

This entity is the second most common known tobacco- related malignancy, lung cancers being the first one Bassett JC et al (2). Smoking is a well-known modifiable risk factor being responsible for about half of all urothelial bladder cancers by Seth A Strope, James E Montie (3).Contemporary smoking triples the risk of bladder cancers comparative to never smoking. The population attributable risk is 50% to 65% in men and 20% to 30% in women, of bladder cancer for smoking, as elucidated by previous studies by Neal D. Freedman et al (4).

Other risk factors include occupational subjection to substances like aromatic amines and polycyclic aromatic hydrocarbons that takes place mainly in industrial areas by Maximilian Burger et al (1), hair dye use by Harling M1, Schablon A, Schedlbauer G, Dulon M, Nienhaus A (5), small intake of water by Michaud DS et al (6) age and male gender by Parag Gupta et al (7). Preventive factors includes; diet containing vegetables and fruits by Liu H et al (8), taking vitamin A by Jian-er Tang, Rong-jiang Wang , Huan Zhong, Bing Yu and Yu Chen. (9), and drinking large amount of water (10) Michaud DS et al .

There are very few studies that have mentioned the efficacy of screening for bladder cancer, so the best defense lies in the primary prevention hence only possible by decreasing the modifiable risk factors. For such course of action, modifying a behavioral risk factor could only be possible by the general spread of awareness of associated link between the disease and the behavior accountable for it. As anti-smoking campaigns conventionally focus on lung cancers, hardly a few indicate bladder cancer. We assessed the awareness regarding smoking as a risk factor for bladder cancer among the general population of Karachi city.

MATERIALS AND METHOD:

This is a prospective cross-sectional study with the sample size of 384. The study duration was two months from 1st January 2015- 30th February 2015. The study was conducted in Karachi, which is a densely populated city of Pakistan. All the participants were given a briefing regarding objectives of the study and were ensured regarding the maintenance of the confidentiality of their identity. A prerequisite verbal consent was taken by all the participants. Questionnaire was designed to obtain the knowledge about the pretest demographic characteristics of the individuals and their knowledge about the causative and preventing factors related to bladder cancer, a special focus was put on to evaluate the awareness about the relation of
smoking with bladder cancer. The data was collected by interviewing the participants according to the designed questionnaire, who were selected randomly. Researchers had obtained all the information according to it by interviewing the target population by themselves. Individuals including both the genders who were aged above 18 years were included in the study. Medical students and individuals belonging to medical profession were excluded. Data was analyzed by SPSS version 20.0.

**RESULT:**

Out of 384 participants 40.9% (n=157) were males 30.2% (n=116) were females. The response rate was 100%. Majority 85.9% (n=330) were from urban areas while 14.1% (n=54) belonged to rural area. 41.9% of the participants were undergraduate education. A 19.8% (n=76) of participants reported of having smoking habit. Over all only 7.3% (n=28) had awareness about smoking can cause bladder cancer, though 96.9% (n=372) considered cancer can be lethal for their lives. A large percentage (89.3%) thinks that passive smoking is hazardous for their heaths. The participants had very low or no awareness about the risk and preventive factors about bladder cancer.

**DISCUSSION:**

According to the world health organization in economically developed countries cancer is known to be the leading cause of death while it is the second leading cause of death in developing countries by World Health Organization, 2004 (11). The rising global burden of cancer chiefly because of growing and aging world population together with a behavioral adaptation, particularly smoking has a worth of especial mention here, in economically developing countries. Previous statistics in the studies have documented a higher incidence rates in developed countries which are half those when compared to developed countries. But the overall mortality rates generally tend to be equivalent among both sorts of the countries. In developing countries, plausibly due to late diagnosis and delayed treatment, the survival is poorer by Ahmedin Jemal et al (12).

Increasingly cancer-associated lifestyle, notably smoking and “westernized” diets are the most avowed risk factors causing bladder cancers by Ahmedin Jemal et al (12). Occupational exposure to chemical compounds like aromatic amines and polycyclic aromatic hydrocarbons have been investigated and it was reported being the culprit cancer causing agent making the people more vulnerable for bladder cancer development especially in industrial areas processing metal, paint, dye, and petroleum products by Maximilian Burger et al (1). Another study showed that hairdressers are statistically at significant risk, peculiarly those who have worked for considerably longer duration greater than 10 years in the respected profession by Harling M (5). A case-control study on the population of Los Angeles linked the water intake with bladder cancer, it was concluded that a greater water intake increases frequency of micturation, leads to the dilution of the urine and hence reduces the contact of carcinogens with urothelium by Michaud DS et al (6). Men are more prone to it while women have worst
survival by Parag Gupta et al (7). The environmental and dietary exposures are the possible factors that possess an excessive risk in male gender though still not pinpointed and remain negotiable. This is also ascribed due to hormonal factors and urination habits by Horn EP et al (13), Goonewardena et al (14), Fajkovic H et al (15). The analysis of collected data of our study showed that there is lack of awareness as shown by the chart below.

### AWARENESS OF RISK FACTOR FOR BLADDER CANCER

<table>
<thead>
<tr>
<th>Factor</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cigarette Smoking</td>
<td>28</td>
<td>7.3</td>
<td>7.3</td>
<td>7.3</td>
</tr>
<tr>
<td>Age</td>
<td>54</td>
<td>14.1</td>
<td>14.1</td>
<td>21.4</td>
</tr>
<tr>
<td>Petrol Pump Workers</td>
<td>115</td>
<td>29.9</td>
<td>29.9</td>
<td>51.3</td>
</tr>
<tr>
<td>Hair Dye Used By Barbers</td>
<td>15</td>
<td>3.9</td>
<td>3.9</td>
<td>55.2</td>
</tr>
<tr>
<td>Workers In Paint Industries</td>
<td>115</td>
<td>29.9</td>
<td>29.9</td>
<td>85.2</td>
</tr>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Westernized diet</td>
<td>10</td>
<td>2.6</td>
<td>2.6</td>
<td>87.8</td>
</tr>
<tr>
<td>Bladder Infection</td>
<td>1</td>
<td>.3</td>
<td>.3</td>
<td>88.0</td>
</tr>
<tr>
<td>Male Gender</td>
<td>3</td>
<td>.8</td>
<td>.8</td>
<td>88.8</td>
</tr>
<tr>
<td>Textile Workers</td>
<td>16</td>
<td>4.2</td>
<td>4.2</td>
<td>93.0</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>27</td>
<td>7.0</td>
<td>7.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>384</td>
<td>100.0</td>
<td></td>
<td>100.0</td>
</tr>
</tbody>
</table>

Transitional cell carcinoma is the most common variant of bladder cancer, accountable for 90% cases and is said to be exclusively associated with cigarette smoking by Rabbani F & Cordon-Cardo C (16) and Peter Fabian Rambaul, Philipo L Chalya & Kahima Jackson. (17). However in our study only 7.3 % people were aware of this hazardous effect of smoking. While chronic cystitis with Schistosoma haematobium causes squamous cell carcinoma by Felix AS et al (18) Zaghloul MS et al (19).

When it comes to the prevention, a recent meta-analysis has shown the role of vegetables and fruits in reducing the risk of bladder cancer by Liu H et al (8). Another meta-analysis concurred the same role of vitamin A by Jian-er Tang et al (9), as it is hypothesized to confer the modulation of a miscellany of biological processes including proliferation, apoptosis development and differentiation by Fatemeh Alizadeh et al (20). Large intake of water dilutes urine and increases voiding thereby drops down the concentration and carcinogens’ time of contact with urothelium by Michaud DS et al (6) and Michaud DS et al (10). The knowledge of preventive factors is also lacking in our study participants as shown by the chart below.

### AWARENESS OF PREVENTIVE FACTORS

<table>
<thead>
<tr>
<th>Factor</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drinking Lots Of Water</td>
<td>115</td>
<td>29.9</td>
<td>29.9</td>
<td>29.9</td>
</tr>
<tr>
<td>Eating Vegetables + Fruits</td>
<td>149</td>
<td>38.8</td>
<td>38.8</td>
<td>68.8</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>72</td>
<td>18.8</td>
<td>18.8</td>
<td>87.5</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>48</td>
<td>12.5</td>
<td>12.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>384</td>
<td>100.0</td>
<td></td>
<td>100.0</td>
</tr>
</tbody>
</table>
Since the commonest variant of bladder cancer is widely known to be associated to smoking by Rabbani F & Cordon-Cardo C (16), demoting consumption of tobacco products, disrating the number of advertisements and prohibiting public smoking is thought to have a directly decrease down effect on smoking percentage and so on bladder cancer risk by Brian King, Terry Pechacek & Peter Mariolis, (21). Several recent studies infer that raising the cigarette prices decreases its consumption and lessens its initiation by David T. Levy, Frank Chaloupka, & Joseph Gitchell (22).

Shafey O, Eriksen M, Ross H, Mackey J (23).

**RECOMMENDATIONS:**

We recommend urology departments need to enhance research work in bladder cancers along with stressing the campaigns against bladder cancer awareness among the general population.

**CONCLUSION:**

In the present study, majority of the surveyed individuals were unaware of the relationship between cigarette smoking and bladder cancers, regardless of their smoking statuses. It has a substantial effect on public health because of high prevalence of smoking. We emphasize on addressing the primary prevention, smoking cessation programs and awareness campaigns against bladder cancer as lack of knowledge about the risks and signs of bladder cancer prone to misdiagnosis, delayed diagnosis, limits the treatment options, and ultimately worsens the prognosis.

**REFERENCES:**


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