

## ABSTRACT

This study investigated the effect of different risk factors in the occurrence of urinary bladder cancer in Pakistan on the basis of a case control study using both descriptive and analytical approaches. A sample of 900 subjects including 300 cases and 600 controls was selected from different areas of Pakistan including headquarter of all four provinces and federal area (Islamabad) through a questionnaire. The requisite information was obtained from all the patients/ controls by the researcher using the direct interview method. From the headquarters of Khyber PukhtoonKhwa, Sindh, Baluchistan and federal area (Islamabad), 150 subjects (including cases and controls) were taken from wards of two selected public hospitals but from the headquarter of the Punjab (Lahore), 300 subjects (including cases and controls) were taken from the wards of four selected public hospitals. Controls are taken by matching the gender, area of residence and age above 40 years. About 22 factors with sub categories were included in the study. For bivariate analysis, the chi-square, phi/v statistics and Kandall's tau-b are used. For the purpose of multivariate analysis, the binary logistic regression was run by using the SPSS (version-16) to observe the significant risk factors and prediction of the model. In the descriptive analysis, it was observed that risk of bladder cancer increases with an increase in the number of cigarettes smoked per day, years of smoking and risk decreases when the stop smoking period increases. Further more, similar results were observed in the bivariate analysis. In the overall analysis, the six factors including hair dye, chemical exposure, family history, cigarette smoking, fried items and fats items are found to be positively significant with the odds ratios and 95 % confidence intervals of odds ratios (2.96; 1.396-6.279), (2.59; 1.460-4.607), (3.13; 1.325-7.394), (10.6; 7.007-15.941), (2.11; 1.364-3.269) and (2.08; 1.309-3.305), respectively. While the three factors including lifestyle, fluid consumption and use of fruits are found to be negatively significant with odds ratios and 95% confidence intervals for the odds ratios (0.102; 0.056-0.187), (0.268; 0.183-0.392) and (0.292; 0.193-0.440), respectively indicating that these three factors are protective factors against urinary bladder cancer. In area wise study, eight factors age, social status, lifestyle, family history, cigarette smoking, tea, fluid consumptions and fruits in Punjab, three factors cigarette smoking, source of drinking water and fried items in Islamabad, six factors chemical exposure, lifestyle, cigarette smoking, fluid consumption, fried items and fruit in Khyber Pukhtoon Khwa, three factors cigarette

smoking, fluid consumption and fruits in Baluchistan and two factors cigarette smoking and fluid consumption in Sindh are found to be significant. In eight factors of Punjab, age, family history, cigarette smoking and tea are found to be positively significant while the other four factors social status, lifestyle, fluid consumptions and fruits are negatively associated with the bladder cancer. In three factors of Islamabad, two factors cigarette smoking and fried items are observed to be positively significant while the source of drinking water (government provided water) is observed to be protective as compared to the tap water. In six factors of Khyber Pukhtoon Khwa, chemical exposure, cigarette smoking and fried items are directly associated with the risk of bladder cancer while the other three factors lifestyle, fluid consumption and fruit are the protective factors for the disease. In three factors of Baluchistan, cigarette smoking is found to be positively significant while the fluid consumption and fruits are inversely associated with risk of bladder cancer. In two factors of Sindh, cigarette smoking is directly associated with disease while the other fluid consumption is found to be negatively significant. Cigarette smoking is the major risk factor and found to be significant in each area of Pakistan. Fluid consumption is also major protective factor and found to be significant in all areas except Islamabad. In studying the occupational risk factors, four categories of the occupations including cooks, drivers, metal workers and textile workers are found to be significant with the odds ratios and the 95% confidence intervals (14.132; 4.068 - 49.088), (7.949; 3.321- 19.025), (7.571; 3.147 - 18.214) and (2.168; 1.136 - 4.138), respectively. While the farmers, painters and leather workers are observed to be insignificant in Pakistan. According to this study, the cooks are at higher risk of bladder cancer as compared to all other occupations.

**Key Terms:** Bladder cancer, Risk Factors, Logistic Regression, Odds ratio, Controls, Significance, Retrospective