Distribution of smoking, water resource and other environmental factors in patients affected by superficial bladder cancer

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Introduction and Objective: The pathogenetic role cancer of sigarette smoking and employment in bladder has been studied, however, that of other environmental factors is not well defined. Case-control studies require high numbers and are expensive. As a preliminary approach to larger case-control studies, the distribution of potential risk factors coming from environmental pollution among patients affected by superficial bladder cancer (TCCB) has been prospectively analyzed.

Methods: The analysis was limited to patients affected by medium risk superficial TCCB. Patients with primary single Ta G1-2, Tis or T1G3 tumors were excluded. All patients underwent TUR and early intravesical chemotherapy. Forty Italian urological centres joined the study. Detailed informations about age, sex, urban or extra-urban residency, employment, active and passive cigarette smoking, water resource, hair-dye use were centralized. The distribution of the above mentioned environmental factors was analyzed in relation to tumor characteristics such as multiplicity and previous natural history. Results: Until now today 474 patients have been recruited, 182 affected by primary tumors (38.4%) and 293 presenting multiple lesions (61.8%). Over 81% of the patients lived in urban areas, 88 patients (19%) were employed in industry and 36 (7.6%) used hair dye. Forty percent (196 patients) were smokers, with a median smoking period of 30 years. One third have smoked cigarettes in the past. Bottled water was the only water resource for 192 patients (41%).At multivariate analysis a significant correlation between tumor multiplicity and employment in industry (p=0.01) and between past natural history and period of cigarette smoking (p=0.05) was found. Preliminary, a correlation trend between water resource and bladder cancer in non-smoking patients was detected. For non-smokers the civic water system was the main water resource more frequently than for smokers (75% vs 53%). This might imply a role of water resource and chlorination as an enviromental risk factor. Conclusions: Industry employment and period of cigarette smoking were statistically related to multiplicity and previous history of the tumor. Water resource can be implied as an enviromental risk factor in non-smokers. Further and larger case-control studies are ausplicable.

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