Associations differ by sex for catechol-O-methyltransferase genotypes and bladder cancer risk in South Egypt.


Abstract:

OBJECTIVES: To examine associations between urinary bladder cancer risk and polymorphisms of the gene encoding the catechol estrogen-metabolizing enzyme, catechol-O-methyltransferase (COMT), among Egyptian women and men.

MATERIALS AND METHODS: We used questionnaire and genotype data from a case-control study in Egypt. This analysis focused on South Egypt cases with confirmed urothelial (UC) or squamous cell (SCC) carcinoma of the bladder, and controls frequency-matched on sex, 5-year age-group, and residence governorate. Real-time PCR on blood specimen DNA was used to determine COMT genotypes encoding for Val/Val, Val/Met, and Met/Met, the enzyme forms associated with high, intermediate, or low activity, respectively. RESULTS: The study sample, which included 255 women and 666 men, consisted of 394 cases with histologically confirmed UC (225) or SCC (n = 169), and 527 controls. The odds of having either type of bladder cancer were lower among men with genotypes encoding Val/Met or Met/Met than among those with the genotype encoding Val/Val, even after adjustment for other factors, such as smoking and schistosomiasis history [adjusted odds ratio (AOR): 0.64; 95% confidence interval (CI): 0.43, 0.96]; however, the association was statistically significant for SCC (AOR 0.57; 95% CI: 0.34, 0.96) but marginal for UC (AOR: 0.64; 95% CI: 0.39, 1.02). No significant associations were detected between bladder cancer risk and COMT genotypes among postmenopausal women. CONCLUSIONS: These findings suggest that even after controlling for established risk factors, the involvement of COMT genotypes in bladder cancer risk differs among men compared with women in South Egypt.

Published In:

Urol Oncol. , ;30(6) , 841-7.