Genetic aberrations of the K-ras proto-oncogene in bladder cancer in relation to pesticide exposure

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Abstract:

In Egypt, bladder cancer is one of the most popular cancer, accounting for 31% of all cancer cases. It ranks first in males about 16.2% of male cancer. The incidence in rural areas among males is near 32 per 100,000. The exact etiology of bladder cancer is still unknown; K-ras gene is known as a critical DNA target for chemical carcinogens as a pesticide. Some occupational hazard exposure is thought to be directly genotoxic, while others might enhance the mutagenicity and carcinogenicity of directly acting genotoxic agents. Analysis of the relationship between pesticide exposure and mutation in the K-ras gene in human bladder cancer. One hundred patients were diagnosed with bladder cancer and one hundred controls attended the outpatient clinic; after taking consent and filling a questionnaire for age, sex, occupation and pesticide exposure, surgically resected specimens were collected and the samples were used to determine the k-ras mutation. Blood samples were taken to analyze the level of acetylcholinesterase enzyme and level of P53. The present study indicated that pesticide exposure may play a great role in malignant transformation of the bladder cells through mutation in the K-ras gene; there was a significant correlation between the acetylcholinesterase enzyme level and k-ras mutation (p

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