

ORIGINAL ARTICLE



Nicotine and Chromium Co-exposure Lead to Hepatotoxicity in Male Albino Rats

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Nicotine is one of the major constituents of different types of smoking and is the more toxic part also. Thirty metals including chromium and some chromium compounds have been detected in tobacco smoke are causally associated with cancer in humans. In the present investigation, we evaluate the individual and combined effect of nicotine and chromium (VI) on the toxicity of liver in animal. In this study, a group of male albino rats (80-100 g) were induced by intraperitoneal injection of vehicle (0.9% NaCl), nicotine tartrate (0.2 mg / 100 g body weight / day), K₂Cr₂O₇ (0.8 mg / 100 g body weight / day), and combined exposure of K₂Cr₂O₇ and nicotine tartrate at an interval of six hours for a period of 28 days. After the treatment the liver tissues were collected to measure the hepatotoxicity. It was showed that individual and combined exposure of chromium (VI) and nicotine marked decreased the activities of GOT, GPT, ALP and LDH in liver tissue. It was also noted that the level of MDA, CD and NO production increased significantly in response to individual and combined exposure of nicotine and chromium. On the other hand, it was observed that individual and combined exposure of nicotine and chromium (VI) marked decreased the GSH and GSSG content, and also the antioxidant enzymes (SOD, CAT, GPx, GR and GST) in tested organ. The present study suggests that nicotine and chromium exhibited significant changes during individual exposure whereas co-exposure showed a marked alteration of the toxicity of liver in male albino rats.

Key words: Nicotine, chromium, liver, toxicity, oxidative stress



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