

Possible Endocrinal and Liver Enzymes Toxicities Associated with Long Term Exposure to Benzene in Saudi Arabia

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Abstract : Background: - The strategies for this study were based on the toxic effect of long-term inhalation of Benzene on hormones and liver enzymes and various parameters related to it. The following databases were searched: benzene, hepatotoxic, benzene metabolism, hormones, testosterone, hemotoxic, and prolonged exposure. A systematic strategy is designed to search the literature that links benzene with the multiplicity and different types of intoxication or the medical abbreviations of diseases relevant to benzene exposure. Evidence suggests that getting rid of inhaled gasoline is by exhalation. Absorbed benzene is metabolized by giving phenolic acid as well as meconic acid, followed by urinary excretion of conjugate sulfates and glucuronides. Materials and Methods :- This work was conducted in the Al-Khadra laboratory in Taif 2020/2021 and aimed to measure some of the possible endocrinal and liver toxicities associated with benzene's long-term exposure in Saudi Arabia at the station workers who are considered the most exposed category to gasoline. One hundred ten station workers were included in this study. They were divided into four patient groups according to the chronic exposure rate to benzene, one control group, and three other groups of exposures. As follows: patient Group 1 (controlled group), patient Group 2 (exposed less than 1y), patient Group 3 (exposed 1-5 y), patient Group 4 (more than 5). Each group is compared with blood sample parameters (ALT, FSH and Testosterone, TSH). Blood samples were drawn from the participants, and statistical tests were performed. Significant change ($p \leq 0.05$) was examined compared to the control group. Workers' exposure to benzene led to a significant change in hematological, hormonal, and hepatic factors compared to the control group. Results:- The results obtained a relationship between long-term exposure to benzene and a decrease in the level of testosterone and FSH hormones, including that it poses a toxic risk in the long term ($p \leq 0.05$) when compared to the control. We obtained results confirming that there is no significant coloration between years of exposure and TSH level ($p \leq 0.05$) when compared to the control. Conclusion:- We conclude that some hormones and liver enzymes are affected by chronic doses of benzene through inhalation after our study was on the group most exposed to benzene, which is gas station workers.

Keywords : toxicities, benzene, hormones, station workers

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