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# EFFECT OF BENZENE INHALATION ON SOME HISTOLOGICAL CHANGES IN LIVER, KIDNEY, SPLEEN AND PANCREAS IN MALE MICE

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**ABSTRACT : In this study, changes in liver, kidney, spleen and pancreas of male mice subjected to benzene inhalation were evaluated. Two experimental groups were included in the study, one group were exposed (100 ppm / 4h. /Day) daily for two weeks were the control group were maintained for a period of two weeks under the same conditions. The animal exposure appeared some of the histological changes in liver, kidney, spleen and pancreas in male mice represent by necrosis, degeneration, Pyknotic, shrinkage of the glomerulus, hyperplasia, and hypertrophy.**

***Key words :*** Benzene, histological changes, liver, kidney, spleen, pancreas.

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## INTRODUCTION

Benzene belongs to a large class of chemicals called organic solvents. Alcohols acetone and methyl ethyl ketone, trichoroethane and xylene are a few other examples, organic solvents (Ann and Fan, 1999). A wide variety of chemicals can be abused as inhalants. The products used for common household and industrial purposes (Ghantous and Danielsson, 1986). Environmental pollutants such as benzene have a negative effect on the function and structure of liver, kidney, spleen and pancreas. Hemosiderosis of liver, spleen, kidney and bone marrow is a frequent pathological alteration both in human beings and in experimental animals dead of benzene poisoning (NTP, 1989).

Several studies in both non-Premont humans and animals have demonstrated that toluene absorbed into the blood is distributed throughout the body with the brain, liver containing the highest level (Li *et al*, 1986).

The aim of present study is to assess toxic effect of benzene inhalation to some organ (liver, kidney, spleen and pancreas) in male mice represented by the histological changes.

## MATERIALS AND METHODS

Animals for experimental were randomly divided in two groups, the first group was exposed by inhalation (100 ppm/4h./Day) daily for two weeks while, the second group represents control were maintained for a period of two weeks under the same conditions. Liver, Kidney, spleen and pancreas of the mice were removed and fixed in 10% neutral buffered formaldehyde for 24 hours, Specimens were processed by dehydrating and clearing was performed by alcohol and xylene respectively. Tissue specimens were impregnated and embedded in paraffin and stained by hematoxylin and eosin stain (Luna, 1986).

## RESULTS

### Kidney

Kidney of treatment group with benzene appeared histopathological changes represent by necrosis, degeneration, pyknotic, bleeding and absence of glomerulus (Figs. 1, 2, 3, 4 and 5). Compare with control group which appeared normal tissue.

### Liver

Liver of treatment group with benzene recorded different pathological states impotent of necrosis, degeneration, bleeding, infiltration, pyknotic, dilated if sinus, congestion and edema. Compare with control group (Figs. 6, 7, 8 and 9).