

Histopathological and Anatomical Changes Induced in the Internal Organs (Heart , Lung , Liver and Kidney) of Laboratory Mice after Exposure to Different Concentrations of Toilet Detergent (Flash)

Abstract:

A commercial detergent Flash (toilet bowl disinfectant), is a widely used and easily available in most houses in Basra province. The present study aimed to investigate the general health risks of this detergent with emphasis on anatomical, histopathological, weight and general behavior effects by ingesting 30 mice (weighting about 22- 30 g) with detergent solutions. The mice were randomly divided in to five groups with 6 mice in each group. The control group was given ordinary water, while the experimental groups were given 25,50,75 and 100% of the detergent solutions, respectively as the only source of water for about 30 days. The relative growth rate (RGR) in percentage of the control mice was 6.3, while the RGR of the experimental mice of 25,50,75 and 100% of the detergent solutions were -14.28 , -30, -50 and -33.33 , respectively. A significant difference ($p > 0.05$) existed between the mean weight of the control mice and the mean weights of the experimental mice with the 25,50 and 75% the detergent solutions . The anatomical alterations were observed in the internal organs (heart, lung, liver and kidney) structures of the experimental mice

including marked black spots, hemorrhage and swollen, and the prominent features were shown in lung. The most important histopathological changes observed in the internal organs (heart, lung, liver and kidney) of the experimental mice included hemorrhage, congestion, infiltration of inflammatory cells and vacuolar degeneration in compared with the control mice . Results demonstrated that abnormal behaviors such as sluggishness, stress and increased mortality rates increased as the increase of the concentration of detergent solutions. The results indicated that the exposure to the toilet bowl detergent is highly health hazard even at small amount, and must be taken into consideration.