SUMMARY

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'the present work was carried out to study the effects of carbaryl on many organs of the albino rats.

The following points were considered the course of the present work:

Clinical symptoms:

The present work showed that, there were marked distention of the abdomen in the first two weeks. During the remaining weeks the rats were cachectie.

Effect on body and organs weights:

There were loss of body weight directly proportional to the increase of the dose, in the recovery group, The loss of body weight decrease but did not reach to the level of the control group.

Erred on the serum biochemical components:

Serum liver enzymes:

There were significant elevation of serum transaminases activities of ALT , AST and alkaline phosphatase starting from the first two weeks of the experiment onwards to the end of the experiment. The values of the enzyme activities in the recovery group decreased but did not reach to the levels of the normal level.

Serum bilirubin:

Carbaryl treated rats showed significant increase in serum bilirubin levels in comparison to control group. The serum bilirubin level in the recovery group decreased but did not reach to the levels of the normal level.

Kidney function tests:

The present study showed that, the serum urea and creatinine were elevated throughout the experiment. In recovery the levels of urea and creatinine their levels but did not reach to the normal level.

Serum uric acid:

The results of the present work showed that the values of serum uric acid were increased. In the recovery the level of the serum uric acid decreased but still inure increase than the normal level.

Serum electrolytes:

The present study showed that, the values of serum electrolytes were decreased after oral administration of carbmyl to rats. Sodium and potassium tended to decrease. The levels were nearly higher than normal in the recovery.

'rotal lipids and cholesterol:

Values of total lipids showed significant increase throughout the experiment Significant I lypetcholeslecolemia was noticed. In the recovery, the levels were decreased to the normal levels.

Serum glucose:

The results show ed that the values of serum glucose in rats treated with carbaryl insecticide were increased from the first two weeks of treatment. In the recovery the level of the serum glucose decreased but still more increase than the normal level.

Serum cholinesterase activity:

Data of the present work indicated that carbaiyl administrated caused a highly significant decrease in this enzyme in comparison to control. On stoppage of treatment in the recovery group, treated animal showed hyper activity of serum cholinesterase activity in comparison to the control group.

Serum protein and albumin:

The results of the present study showed that the values of serum protein and serum albumin in rats treated with carbaryl insecticide were decreased from the first two weeks of treatment. In the recovery the level of the serum albumin decreased but still more increase than the normal level.

Hematological changes:

The Data presented in this study indicated that prolonged administration of carbaryl caused a significant decrease in leucocytic count, erythrocytic count, hemoglobin concentration hematocrite value and blood indices in treated rats. The platelet count showed highly significant decrease in treated rats in comparison to the control group. The values of hematological parameters after stoppage of treatment for 90 days in the recovery group increased but not reached to the values of the control group.

Male fertility and reproductive system parameter changes:

From the obtained results of the present work, it can be concluded that the effect of carbaryl on testis weight and sperrnatozoal examination was significantly affected by the carbaryl insecticide administration especially at 1/10 LD,0, while in recovery the recurrence to the normal state is not completely occurred.

Ilistopathological findings:

Liver:

The present work showed that there were cytomegalic changes of the hepatocytes and the cytoplasm was granular and vacuolar. Hepatic cell nuclei appeared fragmented chromatin. There was severing activation and

proliferation of the Kupffer's cells. along the hepatic sinusoids. Most of the hepatic blood vessels were dilated. There were also loss of cell architecture and increased degeneration of hepatic cells. Most of hepatic cells were necrotic. In the recovery group there were some of cells returned to normal cell architecture and most of cells didn't return to their normal architecture.

Kidney:

The present work showed that there were partial endothelial vacuolation of the capillary tuft. The changes in renal corpuscles increased with marked distortion. The intertubular spaces were marked increased. There were increment in cloudy swellings and degenerations. In the recovery group most of cortical areas regenerated the normal architecture of glomeruli and Tubules, while some of cells were still degenerated .

Testis:

The present study showed that there were degenerative changes in germinal layers of seminiferous tubules in the form of appearance of vacuolation, with engorgement of blood vessels. In the recovery group there were some of regenerating cells with presence of huge number of immature sperms.

As a result of the obtained finding through this investigation, it can be recommend that careful handling and proper use of carbaryl. Also the application of carbaryl must be predicted on selected quantities and manners of usage, which minimize the possibilities of exposure of man and animals to injurious hazards carbaryl.