MEMATOLOGY AND HISTOCHEMISTRY OF LIVER AND KIDNEY OF RABBIT DURING PESTICIDE TREATMENT AND RECOVERY

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Abstract

The present work is aimed to show the induced toxic effects, after treatment with daily oral administration with vertemic 1/10 LD50. The possibility of recovery and attaining near to normal condition after vertemic insecticide withdrawal was also investigated.

The following parameters were estimated, Hematological parameters including complete CBC, Hb, RBC, MCV, MCH, MCHC, WBC, and platelet.

Biochemical parameters including Sugar, Cholesterol, Triglyceride Protein, Albumin, Urea, Creatinine, ALT, AST, Alkaline phosphate and Bilirubin.

Histological structure of kidney and liver were also studied.

Although the daily oral administration of vertemic insecticide caused obvious decrease in the body weight at all time intervals studied administration of vertemic insecticide provoked a general increase in white blood cell count.

Vertemic showed obvious decrease in red blood cell count (RBC). The effect of vertemic insecticide on heomoglobin content (Hb) was parallel to their action on RBC count. Hematocrit value showed a general decrease in response to the teated vertemic insecticide.

Blood platelets count (PLT) showed general increase in response to vetemic insecticide.

Oral administration of vertemic insecticide caused an increase in mean corpuscular volume (MCV), and mean corpuscular hemoglobin (MCH) at all time interval investigated and decrease in mean corpuscular hemoglobin concentration (MCHC). In recovering conditions the previous hematological parameters begin to improve.

A general increase in AST, ALT, bilirubin and alkaline phosphatase activities were noticed in vertemic treatment rabbits. However, these increment were regressed to near to normal levels in recovering conditions.
The daily oral administration of vertemic insecticide for 8 weeks caused a general increase of urea, uric acid and creatinine concentration in rabbit's blood serum compared to the control level.

Both serum total protein and serum albumin were decreased compared to the control group. However the declines in serum total protein and serum albumin were backed near to the normal levels in recovering rabbits.

Glucose content of rabbit's blood serum showed general increase in response to vertemic insecticide administration. In general, results indicated a general increase in serum cholesterol and triglycride level at the different time intervals studied.

However these increment in sugar, cholesterol, triglyceride, urea, creatinine and uric acid were backed near to the normal levels in recovering rabbits.

The main histopathological change in the liver and kidney organs were as follows:

The liver of treated rabbit showed excessive hepato cellular damage, as degenerative and necrotic changes; vaculated nuclei; periportal coagulation necrosis as well as distributed inflammatory cells throughout the liver and the kidney.

The renal tubules suffered from hyaline degeneration, infillration of inflammatory cells in between the degenerated renal tubules with hemorrhage.

However, these result returned to near to normal cases in recovering conditions.

It is concluded from the results of the presents study that administration of vertemic insecticide caused alteration that are directly proportional to dose applied and experimental duration.