

SUMMARY

Carbon Tetrachloride, Effect of N-Acetyl Cysteine on Glutathione (GSH) and Glutathione S- Transferase Activity in Carbon Tetrachloride Induced Liver Damaged

In this study, N-acetyl sistein was researched whether has an effect on GSH and GST enzymes, that has an important role on detoxification reactions, and Malondialhedit (MDA) activity, that is lipid peroxidation determinant at toxicity model that will be composed with carbon tetra chloride (CCl₄) in liver.

Totally 72 rats from six groups were collected to study. 1 st group (CCl₄, 6 th hour) 2 ml/kg i.p assigned, 2 nd group (CCl₄+NAS, 6 th hour), 3 rd group (CCl₄, 72 nd hour), 4 th group (CCl₄+NAS, 72 nd hour) were applied. Olive oil was assigned to 5 th group, while olive oil + NAS (inside peritoneum 50/mg/kg/day) was applied. In N-acetyl sistein application was started 3 days before CCl₄ that injected to tested group and continued while experiment. Blood samples and lives tissues were taken by ether anesthesia from 1 st and 2 nd sample groups -6 hours after CCl₄ injection- and 3 rd and 4 th sample groups –after 72 hours-. To compose a control group 6 rats (after 6 hours later) and respectively 6 rats (72 hours later) from 5 th group were taken. N-acetyl sistein aplication to 6 th group was performed parallel to 2 nd and 4 th groups and blood samples and lives tissues were taken by ether anesthesia from 6 rats after 72 hours for control values. AST and ALT enzymes in blood and lowered GSH and GST and Malondialhedit (MDA) activity, that is lipid peroxidation determinant were performed.

While observing liver enzymes, it was observed that AST and ALT levels increased importantly in CCl₄ given groups in 6 th and 72 nd hours than control group and also observed that AST and ALT levels decreased with addition of NAS. In 72 nd hour CCl₄ given group liver MDA levels were importantly higher than NAS given and control groups, but statistically there was no important difference. While tissue antioxidant levels reviewed, GSH levels were importantly lower than 6 th and 72 nd hours than control groups and increased with NAS addition. GST levels were increased with CCl₄ given group in 6 th hour than control group, but this increase wasn't imporant statistically and lowered with NAS addition. In 72 nd hour CCl₄ given group GST levels were higher than NAS given and control groups; in CCl₄+NAS given groups whether being higher than NAS and control groups, difference between NAS group has no statistical importance.

As a result CCl₄ intoxication was tolerated by organism related to time and NAS has beneficial effects on CCl₄ caused liver defects.

Keywords: Carbon Tetra Chloride, N-Acetyl Sistein, Liver