Abstract
This study was designed to determine the toxic effects of nickel sulfate on the biochemical and elemental profile of liver in protein deficient rats. Nickel sulfate in the dose of 800mg/l in drinking water was administrated to Sprague Dawley (S.D) normal control as well as protein deficient rats for a total duration of eight weeks. The effects of nickel treatment and protein deficiency when given separately and in combination were studied on rat liver marker enzymes like Alkaline phosphatase (ALP), Glutamate oxaloacetate transaminase (GOT), Glutamate pyruvate transaminase (GPT) and also on the status of essential elements in rat liver. Protein deficient, Ni treated as well as combined protein deficient and nickel treated rats showed significant reductions in the body weight and hepatic protein contents as compared to normal control rats. Hepatic alkaline phosphatase activity and alanine aminotransferase showed a significant elevation in rats subjected to protein deficiency, nickel treatment and combined protein deficiency and nickel treatment. As regards to hepatic levels of aspartate aminotransferase a significant elevation was observed in protein deficient and nickel treated protein deficient animals. Nickel administration to normal and protein deficient rats has resulted in a significant increase in concentrations of nickel, phosphorus and sulfur in liver tissue. The concentration of zinc and copper in liver tissue decreased significantly in protein deficient, nickel treated and nickel treated protein deficient animals. Tissue iron concentrations were found to be decreased in protein deficient animals, but the concentrations of iron got elevated significantly in nickel treated and nickel treated protein deficient animals. It has been observed that selenium got decreased significantly in protein deficient, nickel treated and nickel treated protein deficient animals when compared to normal animals. The elevation of selenium in nickel treated protein deficient animals was also significantly higher when compared to protein deficient animals.

Keywords