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Hepatoprotective effect of Hydroalcoholic extract of *Potentilla reptans* on oxidative stress biomarkers in carbon tetrachloride-induced hepatotoxicity model in Rat

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Abstract

Production of reactive oxygen species (ROS) and induction of oxidative stress are the main mechanisms of xenobiotics-induced liver injury. In the present study, the effect of hydro-alcoholic extract *Potentilla reptans* on oxidative stress indices in carbon tetrachloride (CCl4) induced liver toxicity in male rats was investigated. Thirty five male Wistar-albino rats (200-250 g) were divided into five experimental groups; Group I was treated with distilled water via gavage daily, followed by Normal saline 0.9%, 1ml/kg B.W, intraperitoneal (i.p) on day 16. Group II received distilled water via gavage daily, followed by olive oil, i.p on day 16. Group III treated with distilled water via gavage daily, followed by a single dose of CCl4 with olive oil 50%, i.p on day 16. Group IV and V received extract at doses of 100 and 250 mg/kg via gavage daily, followed by a single dose of CCl4 with olive oil 50%, i.p on day 16. Then serum levels of biochemical liver parameters such as, aspartate aminotransferase (AST), alanine aminotransferase (ALT), alkaline phosphatase (ALP), total protein (TP) and total bilirubin (TB) and serum level of oxidative enzymes, superoxide dismutase (SOD), glutathione peroxidase (GPX) and catalase (CAT) were performed. The results of our research showed that CCl4 in the hepatotoxic group caused a significant increase in the serum levels of AST, ALT, ALP and TB as well as decreased TP, SOD, GPX and CAT serum levels. Treatment with the extract at dose 250 mg/kg/d significantly normalized the CCl4-elevated serum levels of ALT, AST and ALP. The extract (100 and 250mg/kg) also increased levels of SOD and GPX. Results of the present study indicated that the extract had antioxidant properties and reduced the toxic effects of carbon tetrachloride in the liver.

Key word: Hydro-alcoholic extract of *Potentilla reptans*, Carbon-tetrachloride, Biomarker, Hepatotoxicity, Oxidative Stress

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