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Full Length Research Paper

Hepatomodulatory role of *Enicostemma littorale* Blume against oxidative stress induced liver injury in rats

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Abstract

The hepatomodulatory response of ethanol extract of *Enicostemma littorale* Blume was examined in contrast to oxidative stress-induced liver injury by carbon tetrachloride (CCl_4) in albino wistar male rats. The rats received the extract, orally at the doses of 125, 250 and 500 mg/kg b wt/day for 21 consecutive days and CCl_4, at the dose of 0.2 ml/kg b wt/twice a week, i.p with olive oil, in the ratio 1:1 treatment. The rats subjected only CCl_4 with olive oil, showed remarkable oxidative stress-induced liver injury. Supplementation of *E. littorale* extract significantly ($P \leq 0.001$) increased the hepatic reduced glutathione (GSH), glutathione -s-transferase (GST), glutathione peroxidase (GPx), superoxide dismutase (SOD), catalase (CAT) and vitamin-C (vit. C) in the liver, with a dose-dependent reduction of the thiobarbituric acid reactant substances (TBARS) as evidenced by reduced hepatic lipid peroxidation (LPO) levels, compared with the control animals. The hepatic total cholesterol and triglycerides level were also significantly decreased in the groups receiving *E. littorale* extract, in comparison to controls. Further, the hepatic marker levels-AST, ALT (aspartate and alanine transaminases), ALP (alkaline phosphatase), ACP (acid phosphatase), g -GTP (gamma glutamyl transpeptidase), LDH (lactate dehydrogenase), SDH (sorbitol dehydrogenase), Total bilirubin, total protein and albumin in serum were also restored to normal level dose-dependently after the supplementation of *E. littorale* extract in comparison to respective controls. These biochemical observations were strongly supported by a comparative histoarchitectural examination of liver sections from treated groups, further corroborated the hepatomodulatory role of *E. littole* extract. Silymarin was used as standard drug for comparison with the *E. littorale* extract. In conclusion, these results suggest the hepatomodulation by *E. littorale* Blume against oxidative stress mediated through interference with free radical generation and reduction in fat metabolism.

Key words: Carbon tetrachloride, *E. littorale*; Free radicals, Hepatomodulation, Oxidative stress