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Evaluating the Hepato-Protective Activities of Combination of Aqueous Extract of Roots of Tinospora cordifolia and Rhizomes of Curcuma longa against Paracetamol Induced Hepatic Damage in Rats

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Abstract : Objective: To evaluate the hepato-protective activity of Tinospora cordiofolia (Tc) against paracetamol induced hepatic damage in rats. Methods: The plant stem (test drug) was procured locally, shade dried, powdered and extracted with water. Silymarin was used as standard hepatoprotective drugs and 2% gum acacia as a control (vehicle) against paracetamol (PCT) induced hepatotoxicity. Results and Discussion: The hepato-protective activity of aqueous stem extract was assessed by paracetamol induced hepatotoxicity preventive model in rats. Alteration in the levels of biochemical markers of hepatic damage like AST, ALT, ALP and lipid peroxides were tested in both paracetamol treated and untreated groups. Paracetamol (3g/kg) had enhanced the AST, ALT, ALP and the lipid peroxides in the serum. Treatment of silymarin and aqueous stem extract of Tc (200 and 400mg/kg) extract showed significant hepatoprotective activity by altering biochemical marker levels to the near normal. Preliminary phytochemical tests were done. Aqueous Tc extract showed presence of phenolic compound and flavonoids. Our findings suggested that Tc extract possessed hepatoprotective activity in a dose dependent manner. Conclusions: Tc was found to possess significant hepatoprotective property when treated with PCT. This was evident by decreasing the liver enzymes significantly when treated with PCT as compared to PCT only treated group ($P < 0.05$). Hence Tinospora cardiofolia could be a good, promising, preventive agent against PCT induced hepatotoxicity.

Keywords : Tinospora cardiofolia, hepatoprotection, paracetamol, silymarin
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