

Hepatoprotective activity of merremia borneensis against carbon tetrachloride (CCl₄)-induced acute liver damage in rats: a biochemical and histopathological evaluation

ABSTRACT

The pathogenesis of various liver injuries involves oxidative damage. This research was planned to examine the effects of *Mereemia borneensis* extract on hepatic oxidative damage caused by carbon tetrachloride (CCl₄) in rats. Sprague Dawley rats were exposed to *M. borneensis* (125 and 250 mg/kg b. wt.) once daily for 14 d followed by two doses of CCl₄ (1.2 ml/kg b. wt.). After 2 w, the rats were sacrificed and hepatoprotective analysis was done. Orally administration of CCl₄ enhances serum transaminase (ALT; alanine transaminase and AST; aspartate transaminase), γ -glutamyl transpeptidase, lipid peroxidation, reduction in glutathione, catalase, glutathione reductase, glutathione peroxidase, quinone reductase and glutathione S-transferase. Pretreatment of rats with *M. borneensis* at 125 and 250 mg/kg body weight significantly reduced levels of ALT, AST, γ - glutamyl transpeptidase and lipid peroxidation of CCl₄ treated rats. Pretreatment with *M. borneensis* against rats treated with CCl₄, hepatic enzymatic and non-enzymatic antioxidant molecules have increased significantly. A decreased histopathological change in the liver is further evidence of the protective effect of *M. borneensis*. Our data suggest that *M. borneensis* can be a potential hepatoprotective agent in preventing or treating degenerative diseases that involve oxidative stress.