**Hepatoprotective Effects of Berberine on Carbon Tetrachloride-Induced Acute Hepatotoxicity in Rats**

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Background: Berberine is an active compound in Coptidis Rhizoma (Huanglian) with multiple pharmacological activities including antimicrobial, antiviral, anti-inflammatory, cholesterol-lowering and anticancer effects. The present study aims to determine the hepatoprotective effects of berberine on serum and tissue superoxide dismutase (SOD) levels, the histology in tetrachloride (CCl4)-induced liver injury. Methods: Sprague-Dawley rats aged seven weeks were injected intraperitoneally with 50% CCl4 in olive oil. Berberine was orally administered before or after CCl4 treatment in various groups. Twenty-four hours after CCl4 injection, serum alanine aminotransferase (ALT) and aspartate aminotransferase (AST) activities, serum and liver superoxide dismutase (SOD) activities were measured. Histological changes of liver were examined with microscopy. Results: Serum ALT and AST activities significantly decreased in a dose-dependent manner in both pre-treatment and post-treatment groups with berberine. Berberine increased the SOD activity in liver. Histological examination showed lowered liver damage in berberine-treated groups. Conclusion: The present study demonstrates that berberine possesses hepatoprotective effects against CCl4-induced hepatotoxicity and that the effects are both preventive and curative. Berberine should have potential for developing a new drug to treat liver toxicity.

***Key Words:*** *CCl4, Hepatotoxicity, Liver.*