Effect of schisandrin B and sesamin mixture on CCl4-induced hepatic oxidative stress in rats

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Abstract

To study the effects of schisandrin B and sesamin mixture on carbon tetrachloride (CCl4)-induced hepatic oxidative stress in male Sprague-Dawley rats. The rats were randomly assigned to five groups: control group (olive oil injection), CCl4 group (CCl4 injection), silymarin group (CCl4 injection combined with supplementation of silymarin, 7.5 mg/kg/day), low dose group (CCl4 injection combined with supplementation of schisandrin B and sesamin mixture at a low dose, 43 mg/kg/day) and high dose group (CCl4 injection combined with the supplementation of schisandrin B and sesamin mixture at a high dose, 215 mg/kg/day). The hepatic superoxide dismutase and glutathione peroxidase activities of rats in the low dose and high dose groups were increased significantly compared with those in the CCl4 group. The hepatic reduced glutathione concentration in the silymarin, low dose and high dose groups were increased significantly (48%, 45% and 53%, respectively) when compared with those of the CCl4 group. In addition, the concentration of glutathione in the erythrocytes of the low dose group was significantly higher than the CCl4 group by 25%. These results suggest that the schisandrin B-sesamin mixture exerted a hepatoprotective effect by improving the antioxidative capacity in rats under CCl4-induced hepatic oxidative stress.