Soy and curcumin supplementation inhibits dimethylnitrosamine (DMN)-induced liver fibrosis in rats

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ABSTRACT

Curcumin has been shown to exhibit antioxidant, anti-inflammatory, and anti-cancer properties and extensively studied for its therapeutic aspects in a variety of disorders. Soy consumption associates with lower incidence of chronic diseases in epidemiological and clinical studies in many Asian countries. This study was to investigate the effect of soy and curcumin mix on liver injury and its fundamental mechanism. SD Rats were intraperitoneally injected dimethylnitrosamine (10 mg/kg) three times per week for four consecutive weeks. Soy and curcumin mix (50 or 100 mg/kg) was administered by oral gavage daily for four weeks. Liver morphology, histochemistry, function, and fibrotic status were examined. Fermented soy and curcumin supplementation alleviated the dimethylnitrosamine -induced changes in the relative organ weights of liver, kidney, and spleen and serum levels of alanine transaminase and aspartate transaminase (p <0.05). Fibrogenesis and activation of hepatic stellate cells were relieved upon soy and curcumin supplementation as evidenced by histopathological examination and gene expression of α-smooth muscle actin, respectively. These data demonstrated that fermented soy and curcumin preparations exhibited inhibitory effects in experimental model of liver fibrosis, suggesting their promising role in clinical intervention.

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