Healing effect of Licorice extract in acetic acid-induced ulcerative colitis in rat

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Background and Aims: Licorice extract from the roots of Glycyrrhiza glabra L. (Fabaceae) is one of the medicinal plants that are widely used for centuries for its anti-inflammatory and anti-ulcer activities. Licorice has been shown to have great antioxidant and free-radical scavenging activities. The purpose of this study is to evaluate the healing effect of licorice extract in acetic acid-induced ulcerative colitis (UC) in rats.

Methods: Different doses of Licorice extract (50, 100mg/kg/day orally and 50, 100 mg/kg/day intra-colonic) and Mesalazine (20 mg/kg/day) were administered for 7 days after the induction of colitis. The efficacy of Licorice was studied by macroscopical and histological scoring systems. Serum levels of TNF-α, NO, IL-6 and mucosal content of superoxide dismutase (SOD) were assayed.

Results: Treatment with Licorice attenuated macroscopic damage as compared with acetic acid (P<0.01). Histological analysis showed that Licorice improved the microscopic structure of the colonic mucosa. Administration of Licorice effectively increased SOD enzymatic defense system. TNF-α, NO and IL-6 levels were also diminished dose dependently (P<0.05). All these parameters were comparable to the standard mesalazine.

Conclusions: Results showed a valuable effect of Licorice extract against acetic acid-induced UC possibly by its antioxidant and anti-inflammatory properties.

Keywords: Licorice extract; Ulcerative colitis; Rat