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Ameliorative Effect of Martynia annua Linn. on Collagen-Induced Arthritis via Modulating Cytokines and Oxidative Stress in Mice

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Abstract : Martynia annua Linn. (Martyniaccae) is traditionally used in inflammation and applied locally to tuberculosis glands of camel's neck. The leaves used topically to bites of venomous insects and wounds of domestic animals. Chemical examination of Martynia annua leaves revealed the presence of glycosides, tannins, proteins, phenols and flavonoids. The present study was aimed to evaluate the anti-arthritic activity of methanolic extract of Martynia annua leaves. Methanolic extract of Martynia annua leaves was tested by using in vivo collagen-induced arthritis mouse model to investigate the anti-rheumatoid arthritis activity. In addition, antioxidant effect of methanolic extract was determined by the estimation of antioxidants level in joint tissues. The severity of arthritis was assessed by arthritis score and edema. Levels of cytokines TNF-α and IL-6, in the joint tissue homogenate were measured using ELISA. A high dose (250 mg/kg) of methanolic extract was significantly reduced the degree of inflammation in mice as compared with reference drug. Antioxidants level and malondialdehyde (MDA) in joint tissue homogenate found significantly ($p < 0.05$) higher. Methanolic extract at dose of 250 mg/kg modulated the cytokines production and suppressed the oxidative stress in the mice with collagen-induced arthritis. This study suggested that Martynia annua might be alternative herbal medicine for the management of rheumatoid arthritis.

Keywords : Martynia annua, collagen, rheumatoid arthritis, antioxidants
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