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Preventive effect of herbs Rosemary and Thyme (Salvia Rosmarinus and Thymus Vulgaris) on Osteoporosis in female Rats.

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Abstract

Osteoporosis is a worldwide disease characterized by reduction of bone mass, thus the aim of this study is to suppress glucocorticoid induced osteoporosis in female rats by the action of rosemary and thyme. The present study was carried out on thirty female rats. The rats were divided into six groups (five rats each). The first group was fed on a basal diet and represents the negative control, while the other five groups were injected subcutaneously with betamethasone at a dose of 4 mg/ kg BW three times a week. One group of them represents the positive control. The other four groups were fed on a basal diet containing 5% and 7.5% of rosemary and thyme for a period of eight weeks. The positive control group showed a significant decrease ($P<0.05$) in serum vitamin D3, Phosphorus (P), Calcium (Ca), levels and Estradiol (E2), Ca and P in femur bone with a substantial reduction in bone mineral density (BMD), and a significant increase in serum malondialdihyde (MDA),C–reactive protein (CRP),interleukin-6 (IL-6) and Alkaline phosphatase (ALP)compared with control group . On the other hand, all osteoporosis groups administrated with different levels at 5% and 7.5% of rosemary and thyme had a significant decrease in serum MDA,CRP,IL-6 and ALP and a significant increase at ($P<0.05$) in serum Vit D3, Ca, P ,E2 ,Ca, P in bone and BMD, compared with the positive control group. Conclusion rosemary and thyme herbs demonstrated bone protection in female rats against glucocorticoid-induced osteoporosis. Rosemary and thyme had a potent protective effect due to its content of essential oils.

Key words: Osteoporosis; Essential Oils; Thyme; Calcium; Phosphorus.