

Osteoprotective Effect of Lawsonia inermis

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Abstract : Osteoporosis is the most common metabolic bone disease which affects an estimated 25 million people worldwide, leading to 1 million fractures, 40,000 annual deaths and health costs of billions of dollars. It is estimated that about 80% of total osteoporosis patients are women, amongst which majority are above the age of 45 years. Postmenopausal osteoporosis is associated with lack of intestinal calcium absorption, increasing pro-oxidant and inflammatory mediators. Lawsonia inermis is a biennial dicotyledonous herbaceous shrub is reported to possess a high flavonoid, high phenolic and Inhibitors of osteoclastogenesis like Daphneside and Daphnorin. The present study aimed to screen osteoprotective effect of methanolic extract of Lawsonia inermis (LIM) in rat model along with its antioxidant activity. LIM shows phenolic content 146.3 Milligrams of Gallic acid equivalent present per gram of extract and 19.8 Milligrams of rutin per gram of extract of Total flavonoid content with IC50 value 42.99µg/ml. bilateral ovariectomized rat model in which Healthy female wistar rats were used for screening. Treatment with LIM was carried out using graded doses of 25mg/kg, 50mg/kg and 100mg/kg for period of 28 days. The negative control group comprised of ovariectomized rats along with saline treatment for four weeks whereas sham operated rats were used as positive control. LIM showed a decrease in bone turnover by preventing loss of urinary calcium and phosphorous moreover it decreased the alkaline phosphatase levels and loss of bone density is prevented by LIM suggesting decrease in osteoclast activity.

Keywords : antioxidant, osteoclast, osteoporosis, ovariectomized

Conference Title : ICPP 2015 : International Conference on Pharmacy and Pharmacology

Conference Location : London, United Kingdom

Conference Dates : September 25-26, 2015