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Effects of an isopropanolic extract of Cimicifuga racemosa on urinary crosslinks and other parameters of bone quality in an ovariectomized rat model of osteoporosis.

Nisslein T¹, Freudenstein J.

Author information

Abstract

A potential bone-sparing effect of *Rhizoma actaeae* (= *cimicifugae*) *racemosae* (black cohosh) was evaluated in ovariectomized Sprague-Dawley rats. The rats were ovariectomized at 12 weeks of age (body weight, 219-226 g) and placed on a soy-free diet 6 days after surgery. Animals were randomly assigned the following groups: control (n = 10), soy-free diet only; RAL (n = 10), soy-free diet plus raloxifene 3 mg/kg intragastrically; and REM (n = 10), soy-free diet supplemented with an **isopropanolic** black cohosh **extract** (Remifemin) with a daily intake of 4500 micro g triterpeneglycosides. **Urinary** levels of pyridinoline (PYR) and deoxypyridinoline (DPY), specific markers for bone loss, were measured at baseline and at weekly intervals. At the end of the study, the animals were killed and bone loss was determined by volumetric bone mineral density (BMD) measurements and peripheral quantitative computed tomography (pQCT). Mechanical resistance to fracture was also determined. Results demonstrated that an **isopropanolic extract** of black cohosh significantly diminished the **urinary** content of PYR and DPY and the morphometric correlates of bone loss associated with ovariectomy in rats. Reversal of the **effects** of ovariectomy on bone loss began 2-5 weeks after the start of treatment and continued through at least 7 weeks. Results similar in quality and magnitude were obtained in the group treated with raloxifene, a known selective estrogen receptor modulator (SERM). Because extracts of black cohosh are already recognized as safe and effective in the treatment of certain gynecological disorders, a longer-term clinical trial of this herbal remedy for the treatment of osteoporosis is warranted.

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