

Effects of Resveratrol on Bone Mineral Density in Ovariectomized Rats

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Hormone replacement therapy (HRT) has been used to prevent osteoporosis in postmenopausal women. However, HRT is not for everyone, due to concerns of side effects as well as increased risk of breast and possibly uterine cancer. Therefore, Dietary alternatives are considered, which include Trans-3,5,4'-Trihydroxystilbene (trans-resveratrol), a phytoestrogen naturally found in grapes, peanuts and wine with beneficial effects in both cardioprotective and chemopreventive. The purpose of this study was to evaluate the effects of trans-resveratrol on the bone metabolism in ovariectomized rats. 48 Rats were assigned to the following groups: sham surgery + normal diet; ovariectomy(Ovx)+normal diet; Ovx+diethylstilbestrol $0.03\text{mg}\times\text{kgbw}^{-1}\times\text{d}^{-1}$; Ovx +Trans-Resveratrol $5\text{mg}\times\text{kgbw}^{-1}\times\text{d}^{-1}$; Ovx + Trans-Resveratrol $15\text{mg}\times\text{kgbw}^{-1}\times\text{d}^{-1}$; Trans-Resveratrol $45\text{mg}\times\text{kgbw}^{-1}\times\text{d}^{-1}$. The rats were fed for 90 days. In the 90th day, OVX + Trans-Resveratrol $45\text{ mg}/(\text{kgbw}^{-1}\cdot\text{d})$ group had a greater bone mineral density (BMD) than other groups. In the OVX + Trans-Resveratrol $45\text{ mg}/(\text{kgbw}^{-1}\cdot\text{d})$, indices of endocortical bone formation (ALP $37.90\pm 2.96\text{U}/100\text{ml}$, BGP $1.27\pm 0.10\text{ng}/\text{ml}$) were greater than those of the other groups, while the index of endocortical bone absorption (TRAP $10.35\pm 1.72\text{U}/\text{L}$) were lower than those of the other groups. Histopathological examination showed that resveratrol had no endometrial hyperplasia adverse effect. **All of these support that resveratrol may have positive effect on postmenopausal osteoporosis prevention.**

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