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# Effect of menatetrenone on bone mineral density and incidence of vertebral fractures in postmenopausal women with osteoporosis: a comparison with the effect of etidronate.

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## Abstract

The purpose of the present study was to compare the effects of etidronate and menatetrenone on bone mineral density (BMD) and the incidence of vertebral fractures in postmenopausal women with osteoporosis. Seventy-two osteoporotic women, more than 5 years after menopause, 53-78 years of age, were randomly divided into three administration groups: E group; intermittent cyclical etidronate (200 mg/day, 14 days per 3 months; n = 25); M group; menatetrenone (45 mg/day, daily; n = 23); and C group (control); calcium lactate (2 g/day, daily; n = 24). Forearm BMD was measured by dual-energy X-ray absorptiometry at 0, 6, 12, 18, and 24 months after the treatment started. There were no significant differences in age, body mass index, years since menopause, and initial BMD among the three groups. One-way analysis of variance (ANOVA) with repeated measurements showed a significant decrease in BMD in the C group ($P < 0.0001$). Two-way ANOVA with repeated measurements showed a significant increase in BMD in the M group compared with that in the C group ($P < 0.0001$), and a significant increase in BMD in the E group compared with that in the C and M groups ($P < 0.0001$ and $P < 0.01$, respectively). The indices of new vertebral fractures/1000 patient-years in the E and M groups were significantly higher than that in the C group ($chi(2) = 47.7$; $P < 0.0001$ and $chi(2) = 42.4$; $P < 0.0001$, respectively), and did not differ significantly between the E and M groups. The present preliminary study provides evidence to suggest that, despite the lower increase in BMD produced by menatetrenone, this agent, as well as etidronate, may have the potential to reduce osteoporotic vertebral fractures in postmenopausal women with osteoporosis.

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