Trabecular bone density in a two year controlled trial of peroral magnesium in osteoporosis.

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Abstract
Since magnesium regulates calcium transport, and magnesium replacement in magnesium-deficient postmenopausal patients resulted in unexpected improvement in documented osteoporosis, we investigated the effect of magnesium treatment on trabecular bone density in postmenopausal osteoporosis. Thirty-one postmenopausal patients (mean age +/- SD = 57.6 +/- 10.6 years), consecutively admitted to the Back Rehabilitation Unit with musculoskeletal pain of non-malignant origin and bone density values of <= 1.19 g/cm3 (measured by Compton Bone Densitometer), received two to six tablets daily of 125 mg each of magnesium hydroxide (Magnesium Magma USP/; 'Mazor', Israel) for 6 months and two tablets for another 18 months in a 2 year, open, controlled therapeutic trial. Twenty-three symptom-free postmenopausal women (mean +/- SD = 61.2 +/- 6.2 years) whose bone density was concurrently assessed at the same laboratory and who were found to have osteoporosis but refused treatment, served as controls. No new fractures occurred. Twenty-two patients (71 per cent) responded by a 1-8 per cent rise of bone density. The mean bone density of all treated patients increased significantly after 1 year (P < 0.02) and remained unchanged after 2 years (P > 0.05). The mean bone density of the responders increased significantly both after one year (P < 0.001) and after 2 years (P < 0.02), while in untreated controls, the mean bone density decreased significantly (P < 0.001). The disparity between the initial mean bone density and bone density after one year in all osteoporotic patients and in the responders differed significantly from that of the controls (both P < 0.001). (ABSTRACT TRUNCATED AT 250 WORDS)