Abstract

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Circulating levels of vitamins K1 and K2 decreased in elderly women with hip fracture.

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OBJECTIVE: We measured the serum levels of phylloquinone (vitamin K1) and of the menaquinones, MK-7 and MK-8, in a group of 51 women with a mean age of 81 years who were studied within a few hours after a hip fracture.

METHODS: A group of 38 healthy age-matched women randomly chosen from the same population served as controls.

RESULTS: Patients with hip fracture had a marked reduction in serum vitamin K1 (336 +/- 302 versus 585 +/- 490 pg/ml, $p < 0.01$), MK-7 (120 +/- 84 versus 226 +/- 178 pg/ml, $p < 0.001$), and MK-8 (89 +/- 113 versus 161 +/- 145 pg/ml, $p < 0.01$), and a large number had undetectable levels, especially of MK-8. Vitamin K levels were not correlated with the time elapsed after fracture or with serum cortisol or other biochemical variables.

CONCLUSION: These data suggest that patients with hip fracture have vitamin K deficiency, an abnormality that could affect bone metabolism through an impairment of the gamma carboxylation of the gla-containing proteins of bone.

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