
**Abstract**
Elevation of homocysteine is associated with an increased risk for bone fractures. Whether the risk is due to homocysteine or to the reduced levels of cofactors necessary for its metabolisation, such as folates or vitamin B12, is not completely clear. In this study we wanted to determine whether in postmenopausal women, levels of folates, homocysteine or vitamin B12 are predictive of the rate of vertebral bone mineral density (BMD) change. The study was conducted at the centre for the menopause of our university hospital. Between September 2001 and March 2002, 161 healthy postmenopausal women volunteered for a cross-sectional evaluation of BMD and levels of serum folates, homocysteine and vitamin B12. Women were recalled for a second evaluation of vertebral BMD after about 5 years. Women having used anti-resorptive therapies for more than 1 year were excluded. The analysis was possible in 117 postmenopausal women. The annual rate of vertebral BMD change was independently related to levels of folates (coefficient of regression (CR): 2.040; 95%CI: 0.483, 3.596; p=0.011), and initial BMD values (CR: -0.060; 95%CI: -0.117, -0.003; p=0.040). No significant relation was found between the change of vertebral BMD and homocysteine or vitamin B12. BMD values at the first (r=0.225; p=0.016) and the second (r=0.206; p=0.027) evaluation were related to levels of folates, but not of homocysteine or of vitamin B12. These data suggest an important role for folates deficiency in the vertebral BMD decline of postmenopausal women.