Supplementation of ascorbic Acid and alpha-tocopherol is useful to preventing bone loss linked to oxidative stress in elderly.

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OBJECTIVE: To determine the effect of ascorbic acid and alpha-tocopherol on oxidative stress and bone mineral density (BMD) in elderly people.

DESIGN: A double-blind, controlled clinical assay was carried out in a sample of 90 elderly subjects divided into three age-paired random groups with 30 subjects in each group. Group Tx0 received placebo, group Tx1 received 500 mg of ascorbic acid and 400 IU of alpha-tocopherol, whereas group Tx2 received 1,000 mg of ascorbic acid and 400 IU of alpha-tocopherol, for a 12-month period.

MEASUREMENTS: We measured thiobarbituric acid reactive substances (TBARS), total antioxidant status (TAS), superoxide dismutase (SOD), and glutation peroxidase (GPx); BMD was obtained on DXA of hip and spine before and after the 12-month treatment period with supplementation of vitamins C and E.

RESULTS: We found a positive correlation between hip-BMD and SOD (r = 0.298, p < 0.05) and GPx (r = 0.214, p < 0.05). Also, a significantly lower decrease of LPO (p < 0.05) was observed as linked with hip bone loss in the Tx2 group than in the Tx0 group.

CONCLUSIONS: Our findings suggest that that administration of 1,000 mg of ascorbic acid together with 400 IU of alpha-tocopherol could be useful in preventing or aiding in the treatment of age-related osteoporosis.

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