
ARTICLES

Two years of growth hormone (GH) treatment increases bone mineral content and density in hypopituitary patients with adult-onset GH deficiency

G Johannsson, T Rosen, I Bosaeus, L Sjostrom and BA Bengtsson

Research Center for Endocrinology and Metabolism, Sahlgrenska University Hospital, Goteborg, Sweden.

The main purpose of this trial was to determine the effects of 2 yr of GH treatment on bone mineral density (BMD) and bone metabolism in patients with adult-onset GH deficiency. Forty-four patients (24 men and 20 women; aged 23-66 yr) participated in a 2-yr open treatment trial with recombinant human GH. BMD was assessed with dual energy x-ray absorptiometry, and serum concentrations of osteocalcin, carboxy-terminal propeptide of type I procollagen (PICP), and carboxy-terminal cross-linked telopeptide of type I collagen (ICTP) were measured. After 2 yr of GH treatment, the BMD increased in the lumbar spine L2-L4 by 3.8% [95% confidence interval (CI), 2.1-5.5], in the femoral neck by 4.1% (CI, 2.1-6.1) in the femoral trochanter by 5.6% (CI, 3.8-7.4) and in Ward's triangle by 4.9% (CI, 2.2-7.6) compared with baseline. Patients with a z-score (difference in SD from the mean of age- and sex- matched subjects) below -1 SD responded with the most marked BMD increment. The serum concentrations of osteocalcin, PICP, and ICTP remained higher throughout the 2 yr of treatment. Women demonstrated a more marked increase in total body BMD and a less pronounced initial increment in osteocalcin, PICP, and ICTP than men. Two years of GH treatment induced a sustained increase in overall bone remodeling activity, which resulted in a net gain in BMD that was more marked in those subjects with a low pretreatment z-score.

This is an Abstract article. For full article, click on:

<http://jcem.endojournals.org/cgi/content/abstract/81/8/2865>