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1: Calcif Tissue Int. 1998 Jan;62(1):40-6.

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SpringerLink FULL-TEXT ARTICLE

Effect of long-term growth-hormone substitution therapy on bone mineral density and parameters of bone metabolism in adult patients with growth hormone deficiency.

Kotzmann H, **Riedl M**, **Bernecker P**, **Clodi M**, **Kainberger F**, **Kaider A**, **Woloszczuk W**, **Luger A**.

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Reduced bone mineral density (BMD) and the prevalence for osteoporotic vertebral fractures are symptoms of growth hormone deficiency (GHD) syndrome, and GH replacement therapy is now available for GH-deficient adults. We investigated the long-term effects of GH replacement therapy on bone mineral density (BMD) and bone metabolism in 19 adult patients with GHD over a period of 18 months. In response to GH treatment, the initially decreased IGF-I concentrations rose significantly during 18 months of therapy to levels within the normal range (matched for sex and age) (mean change 158.1 +/- 50.8 ng/ml, $P < 0.001$). Parameters of bone formation such as osteocalcin (OC) and procollagen I-C-Peptide (PICP) showed a significant increase in the first 6 months of therapy, followed by a slight decrease in the next months. Markers of bone resorption (CrosslapsR and deoxypyridinoline (D-Pyr) also increased significantly with a peak value after 6 months and all parameters except PICP remained above baseline values after 18 months. BMD of the femoral neck (FN) showed an increase after 18 months of therapy (mean change 0.01 +/- 0.03 g/cm2 after 18 months, n.s.). However, the increase in BMD was significant only in the lumbar spine (LS) (mean change 0.03 +/- 0.04 g/cm2, $P < 0.05$ after 18 months). We conclude that GH replacement therapy in adult patients with GHD over a period of 18 months causes a pronounced increase in bone turnover mainly during the first 12 months of therapy and increases BMD of the lumbar spine and the femoral neck after 18 months.

Publication Types:
- Clinical Trial
- Randomized Controlled Trial

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