

INCREASED PREVALENCE OF RADIOLOGICAL SPINAL DEFORMITIES IN ADULT PATIENTS WITH UNTREATED GROWTH HORMONE (GH) DEFICIENCY

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Growth hormone (GH) plays a key role in the control of longitudinal growth in addition to important stimulatory effects on bone remodelling and bone mass. Over the last years, adult GH deficiency (GHD) has become a recognized and treatable clinical entity. One of the characteristic features of adult GHD is low bone mass accompanied by a marked decrease in serum and urinary markers of bone turnover.

To investigate whether the prevalence and degree of spinal fractures in GHD were related to the age of patients, the bone turnover, the bone mineral density (BMD) and mainly to the GH replacement therapy.

One-hundred-seventy adults hypopituitary patients (67 males and 40 females; mean age: 47 years, range: 16-81) with severe GHD and 104 control subjects (13 males, 91 females; mean age: 64.5 years, range: 47-82) were evaluated for BMD and vertebral deformities as assessed by a radiological approach with quantitative morphometric analysis.

The vertebral fractures were significantly more frequent in GHD patients vs. the control subjects (63.6% vs. 40.4%; $p=0.001$). The fracture rate, as well as the fracture number, were significantly higher in untreated (42 cases) vs treated (65 cases) patients (78.6% vs. 53.8%; $p=0.009$). The two groups of patients, however, showed no significant difference in median T-score. Among the untreated GHD patients, the vertebral fractures were correlated with a pathological T-score ($p=0.002$) and a long duration of disease ($p=0.003$). These correlations were not found in the treated GHD patients, in whom the percentage of fracture was correlated only with the time of starting of GH replacement.

This cross-sectional study reports high frequency of vertebral radiological fractures in adult patients with untreated GHD. The decrease in fracture risk of GHD patients during GH treatment appeared to be independent of the effects of the therapy on bone mass.