CLINICAL EFFICACY OF RECOMBINANT GROWTH HORMONE NHERAPY IN ADULTS WITH ISOLATED GROWTHE HORMONE DEFICIENCY

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Background. Adult isolated growth hormone deficiency (iAGHD) is a clinically significant endocrine disorder associated with metabolic, functional, and psychoemotional disturbances. The growth hormone – insulin-like growth factor-1 (GH-IGF-1) axis plays a central role in the regulation of protein, lipid, and bone metabolism. Deficiency of growth hormone in adults is commonly accompanied by reduced muscle mass, visceral adiposity, decreased bone mineral density, impaired physical performance, and deterioration in quality of life. In recent years, increasing attention has been focused on evaluating the clinical efficacy of recombinant growth hormone therapy and its impact on quality-of-life outcomes and biochemical parameters in patients with iAGHD.

Objective. To evaluate the effects of 6-month recombinant growth hormone therapy on quality of life, clinical manifestations and serum IGF-1 levels in adults with isolated growth hormone deficiency.

Materials and methods: The study included 25 patients diagnosed with isolated growth hormone deficiency and 26 age- and sex-matched healthy individuals who served as the control group. All participants underwent comprehensive clinical, anthropometric, laboratory, and instrumental assessment. Anthropometric evaluation included measurement of body mass index (BMI) and waist circumference. Hormonal assessment involved determination of serum IGF-1 levels and evaluation of growth hormone secretion using the insulin tolerance test (ITT). Bone mineral density was assessed by dual-energy X-ray absorptiometry (DXA). Quality of life was evaluated using the QoL-AGHDA questionnaire. Patients with IGHD received recombinant growth hormone therapy for 6 months. QoL-AGHDA scores and serum IGF-1 levels were reassessed following completion of therapy. Statistical analysis was performed to compare baseline and post-treatment parameters.

Results. Patients with isolated growth hormone deficiency commonly presented with fatigue, muscle weakness, reduced working capacity, emotional lability, and decreased physical activity. A tendency toward abdominal obesity and increased waist circumference was also observed in the patient group. QoL-AGHDA questionnaire results demonstrated significantly impaired quality of life in patients with iAGHD compared with the control group. Hormonal evaluation revealed reduced serum IGF-1 concentrations and an insufficient growth hormone response during the insulin tolerance test, confirming impaired somatotropic function. Following 6 months of recombinant growth hormone therapy, significant clinical improvement was observed. Patients reported reduced fatigue, improved physical activity, and decreased muscle weakness. In addition, QoL-AGHDA scores demonstrated a statistically significant improvement in quality-of-life indicators after treatment. A significant increase in serum IGF-1 levels was also observed following therapy, confirming the clinical efficacy of recombinant growth hormone replacement. The obtained findings indicate that recombinant growth hormone therapy contributes to improvement in both functional status and psychoemotional well-being in adults with IGHD.

CONCLUSION.
Adult isolated growth hormone deficiency is a complex endocrine disorder associated with clinically significant metabolic and functional impairments. Patients with IGHD demonstrate

reduced quality of life, impaired physical activity, and hormonal abnormalities. Six-month recombinant growth hormone therapy resulted in significant improvement in quality-of-life indicators and a marked increase in serum IGF-1 levels. These findings support the clinical effectiveness of recombinant growth hormone therapy in adults with isolated growth hormone deficiency.

Clinical efficacy of recombinant growth hormone therapy in adults with isolated growth hormone deficiency

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Abstract

Adult isolated growth hormone deficiency (iAGHD) is associated with metabolic, functional, and psychoemotional disturbances, leading to impaired quality of life and hormonal imbalance. The aim of this study was to evaluate the effects of 6-month recombinant growth hormone therapy on quality of life and serum IGF-1 levels in adults with iAGHD. The study included 25 patients with iAGHD and 26 healthy controls. Clinical assessment, anthropometric evaluation, insulin tolerance testing, serum IGF-1 measurement, DXA examination, and QoL-AGHDA questionnaire analysis were performed. Patients received recombinant growth hormone therapy for 6 months. Patients with iAGHD demonstrated fatigue, muscle weakness, reduced physical activity, and impaired quality of life. Following therapy, significant clinical improvement and better QoL-AGHDA scores were observed. In addition, serum IGF-1 levels significantly increased after treatment, confirming the effectiveness of recombinant growth hormone therapy. The obtained findings indicate that recombinant growth hormone therapy improves both quality of life and hormonal status in adults with iAGHD.

Key words: iAGHD, growth hormone deficiency, bone mineral density, body mass index, IGF – 1, DXA, Qol – AGHDA, Growth hormone, Insulin tolerance test.