

# Growth Hormone Treatment for Idiopathic Short Stature

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## Background

The purpose of this study was to analyze characteristics and evaluate the effectiveness and safety of treatment with recombinant growth hormone (rGH) in children with idiopathic short stature (ISS).

## Methods

Patients (N=54) were evaluated prospectively. Treatment was received by 27 patients with ISS during 1 year. The administration was done by the accepted methodology. The effectiveness of treatment was evaluated based on change in growing speed, growth SDS and bone age maturation.

## Results:

The mean age of children was  $8,0 \pm 2,7$  ( $3,0 \div 12,0$ ) years. Their height SDS were  $-2,9 \pm 0,55$  ( $-4,8 \div -2,2$ ) and bone age delayed on  $1,6 \pm 1,2$  ( $0 \div 3,6$ ) years. Height velocity SDS were  $-1,54 \pm 1,39$  ( $-4,92 \div 1,15$ ). SDS of IGF1 was  $-0,39 \pm 0,3$  ( $-2,3 \div 1,5$ ). In this group were found that 22,2% patients had low level of IGF1. We also found that 16,7% of these patients had low level of IGFBP3. Analyzed MRI investigation of brain we identified that 81,8% of this patients had normal brain MRI, hypophysitis hypoplasia had 13,7% of patients, in 4,5% cases we found the empty sella turcica. We also analyzed the effectiveness and safety of treatment with rGH. There was an improvement in absolute growth at 6 as well as 12 months period of treatment ( $p=0,02$ ;  $p=0,03$ ). The same was found for growth SDS ( $p=0,02$ ;  $p=0,03$ ). Effectiveness of rGH therapy on bone age maturation also showed improvement among children ( $p=0,01$ ;  $p=0,02$ ). Concurrently, we have analyzed the effectiveness of treatment on the following indicators: the level of IGF1 was increased ( $p=0,03$ ;  $p=0,03$ ). The same improvement was in IGFBP3 levels ( $p=0,03$ ;  $p=0,03$ ).

## References:

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## Conclusions:

It can be concluded that the treatment with rGH to patients with ISS is beneficial as it improves height. During the treatment there were no any changes in indicators of kidney's function, indicators of liver's function as well as the indicators of carbohydrate metabolism.

