primary studies - published RCT

Growth hormone decreases protein catabolism in children with cystic fibrosis.

Code: PM11549686 **Year:** 2001 **Date:** 2001 **Author:** Hardin DS

Study design (if review, criteria of inclusion for studies)

1-yr RCT study

Participants

19 prepubertal children with cystic fibrosis (age 7-12 yr, all

Interventions

daily injections of GH (0.3 mg/kg.wk)

Outcome measures

Baseline results from the subjects with cystic fibrosis were compared with results obtained from nine age- and gender-matched healthy children. Whole body protein turnover was measured at baseline and every 6 months using the stable isotope [1-(13)C]leucine and mass spectrometric analysis.

Main results

Leucine rate of appearance, a measure of protein catabolism, was similar in both cystic fibrosis subgroups at baseline and was significantly higher than in the control children without cystic fibrosis. Treatment with GH resulted in a significantly lower leucine rate of appearance, as well as significantly lower leucine oxidation. The rate of protein synthesis, as calculated from these numbers, actually decreased in the cystic fibrosis subgroup. TNF-alpha levels were higher in both cystic fibrosis subgroups than in controls and correlated with leucine rate of appearance.

Authors' conclusions

The results of this study suggest that one reason GH improves body weight and lean tissue mass is due to improved whole body protein catabolism and improved efficiency of whole body protein kinetics.

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See also

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Keywords

Child; Growth Hormone; Hormones; Insulin-Like Growth Factor I; non pharmacological intervention - diet; pharmacological_intervention; Proteins; Supplementation;