# Responses to growth hormone (GH) therapy in children with short stature with normal GH secretion and slow growth velocity.

Ashraf Soliman, Ahmed Elawwa 55—P3

*Departments of Pediatric Endocrinology , Alexandria University Children<s Hospital, Alexandria, Egypt.*

## INTRODUCTION

**Variability still exist about the growth response to growth hormone (GH) therapy in children with idiopathic short stature**

## Objective

**We describe the growth response to GH therapy ( 0.05 mg/kg/day) for > 2 years in 20 prepubertal children with idiopathic short stature (ISS) who had :**

1. **slow growth velocity ( < -1 SD),**
2. **normal GH response to provocation and**
3. **were significantly shorter than their mid-parents height SDS MPHtSDS (-1 difference).**

## Results

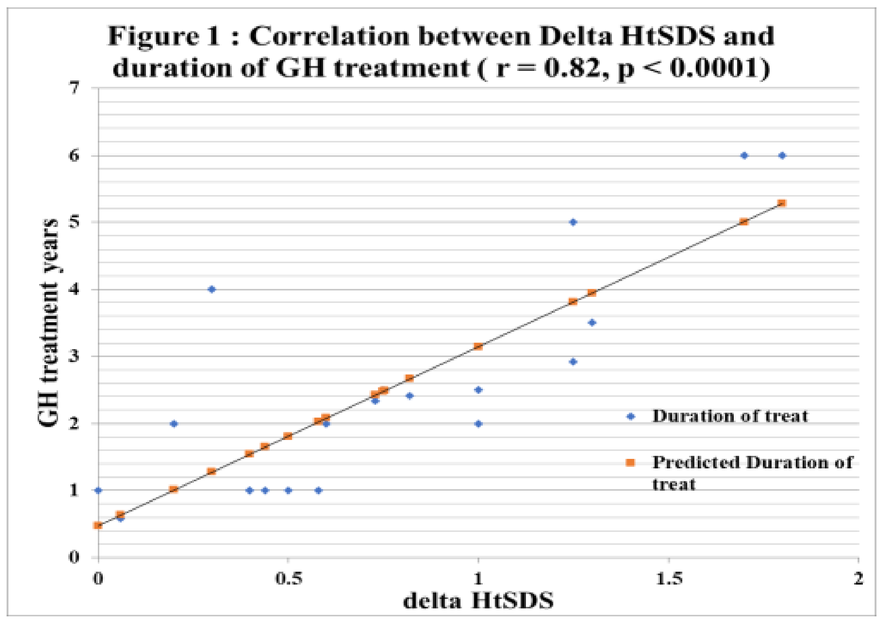
1. **The height SDS gain in a mean of 2.5 years = 0.77 SD, with**
2. **A significant increase in IGF-I (triple)**
3. **normal progression of puberty.**
4. **The difference between children HtSDS and MPHtSDS changed significant from -1.1 +/-3 at the beginning of GH therapy to -0.3 +/- 0.5 at the last visit.**
5. **The HtSDS gain was correlated with**

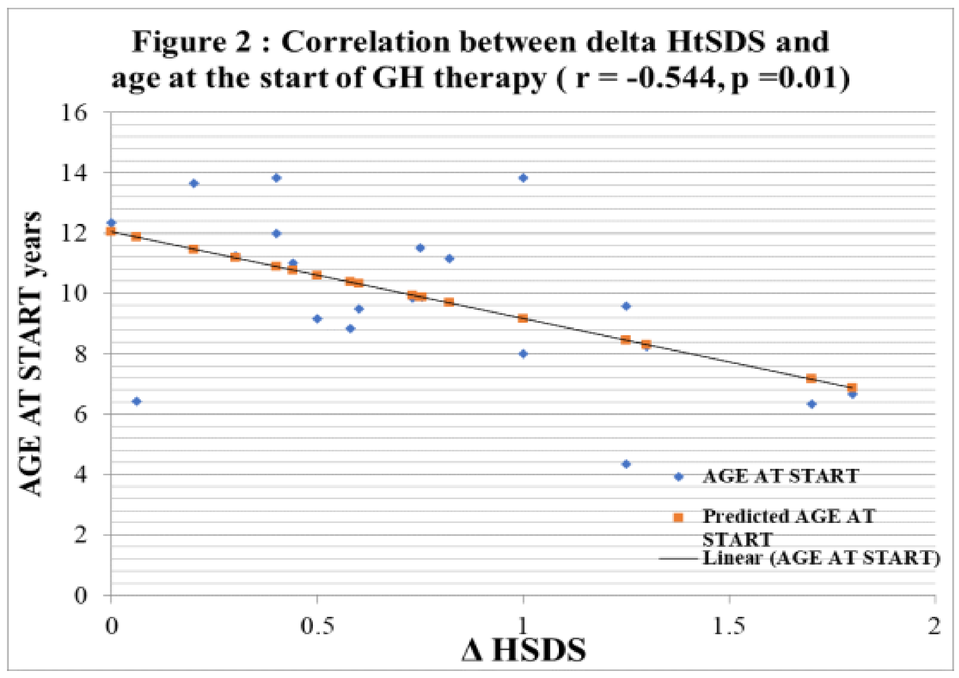
- **the duration of GH therapy ( r = 0.82, p < 0.0001),**
- **negatively with age at the start of treatment ( r = -0.544, p = 0.01, and**
- **negatively with the bone age delay in years ( r = 0.44, p = 0.04).**
- **No correlation between HtSDS gain and IGF-1, Peak GH to provocation, or change in IGF-I ( r = 0.09, -0.18, and -0.02 respectively.**

Ashraf Sliman MD PhD FRCP Department of Pediatrics Hamad General Hospital Doha, Qatar, Atsoliman@yahoo.com

## Management

.




| | | Start of treatment | On last visit | Differences |
|---|---|---|---|---|
| **Age** | Mean | 9.88 | 12.36* | 2.49 |
| **years** | SD | 2.62 | 2.27 | 1.61 |
| **IGF-I** | Mean | 143.4 | 407.1* | 263.7 |
| **units** | SD | 57.4 | 162.4 | 105 |
| **HtSDS** | Mean | -2.34 | -1.57* | 0.77 |
| | SD | 0.41 | 0.55 | 0.14 |
| **Pubertal stage** | Mean | 1.35 | 2.7* | 1.35 |
| | SD | 0.65 | 1.35 | 0.7 |

## Conclusions

**We report significant gain in HtSDS in prepubertal children with ISS on GH therapy. Better response was achieved with prolonged duration of GH therapy, younger age and delayed bone age at the beginning of therapy.**