Study on linear growth of children with idiopathic short children (ISS) with Low Insulin like growth factor 1 (IGF1) at diagnosis: Growth hormone (GH) treatment versus no treatment.

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Idiopathic short stature (ISS) is a condition in which the individual’s height is more than 2 SD below the corresponding mean height for a given age, sex, and population, in whom no identifiable disorder is present.

Some children have relatively low IGF-I levels at presentation, which theoretically can affect their response to GH therapy. The question is: Does GH treatment of these children improve their linear growth compared to no treatment?

To study the effect of GH therapy on linear growth and weight gain in children with ISS who have low IGF-I.

Methods
This retrospective study included children with isolated SS in Pediatric Endocrinology Unit from Jan to Dec 2017.

Inclusion criteria were:

I. SS with current height SDS < -2
II. Age > 2 years.
III. Prepubertal status

Exclusion criteria:

I. Identified cause of SS.
II. Past therapy with GH.

IGF1-deficient children were defined as children without GH deficiency and with IGF1 levels below or equal to -1.5 SDS for age and sex.

At presentation:
The age, HSIDS, BMI, BMISDS, IGF1SDS, peak GH response to clonidine provocation, and bone age didn’t differ between the two study groups (ISS and low IGF1).

After a year of treatment with GH (0.035 mg/kg/day), the HSIDS, weight gain per day, and BMI improved significantly in the GH treated group (P < 0.05).

The IGF1SDS, BMISDS, HSIDS, and difference between HSIDS and mid-parental HSIDS were significantly higher in the treated versus not treated group.

Results

Conclusion
Growth hormone therapy improved linear growth and weight gain in children with ISS who had low IGF1 at presentation compared to the non-treated control group.