**INTRODUCTION**

- Growth hormone (rhGH) is an effective treatment for short children born small for gestational age (SGA) who fail to demonstrate catch-up growth by 2-4 years of age.
- This children usually don’t have classical GH deficiency, but either low GH secretion or reduced sensitivity to GH.
- The goals of therapy are to achieve a normal height in early childhood and an adult height within the normal target range.

**OBJECTIVES**

- The primary objective was to evaluate growth during the first 5 years of rhGH treatment in 10 SGA children.
- The secondary objectives of this study include:
  - registering the incidence and severity of adverse events.
  - occurrence of malignancies during treatment.

**METHODS**

- The study enrolled 10 SGA children: 6 boys and 4 girls.
- All patients were given a mean dose of 0.035mg/kg/d and followed for a period of minimum 5 years (mean 5.68 yrs).
- We register the following parameters baseline and every 6 months:
  - height (cm and SD).
  - weight.
  - height velocity (HV).
  - X-ray of non-dominant hand and wrist for bone age.
  - IGF-1 values (ng/ml and SD).
  - glucic profile (fasting plasma glucose, HbA1c, oral glucose tolerance tests).
  - thyroid status (TSH, FT4, ultrasound).

- All adverse events were registered at every visit.

**RESULTS**

- The mean height standard deviation score (SDS) improved by 2.71, from -2.43 at baseline to +0.28 at 5 years of therapy; the changes in height SDS decreased with time (fig.2).
- Mean height velocity was maximum in the first year (11.76 cm/yr), decreasing in the second (9.24 cm/yr), third (8.16 cm/yr), fourth (7.68 cm/yr) and fifth year of treatment (6.24 cm/yr) (fig.3).

**DISCUSSIONS**

- Early initiation of rhGH therapy has as result the complete recovery of statural deficit in 5 years, according to growth prognosis calculated by parental heights.
- Affecting the carbohydrate metabolism, rhGH treatment may have diabetogenic potential, especially in SGA children who are at risk of developing type 2 diabetes.

**CONCLUSIONS**

- GH therapy is reasonably safe and effective in increasing linear growth in children born SGA who fail to have catch-up growth.
- Maximum height velocity was registered in the first year of treatment, 11.76 cm/yr and declined in time.
- No severe adverse events were registered.
- No malignancies were observed to date.
- Overall, GH treatment was safe and well tolerated.