



Growth response in short preterm- born children small for gestational age in first year of growth hormone treatment

Maria Korpai-Szczyrska¹, Jan Szczyrski², Malgorzata Mysliwiec¹

1)Clinic of Paediatrics, Diabetology and Endocrinology Medical University of Gdansk, Poland

2)Copernicus Hospital Gdansk, Poland

The authors have nothing to disclose

Growth hormone (rGH) treatment is an approved growth promoting therapy in children born small for gestational age (SGA) without spontaneous catch-up. SGA infants may be born either full-term or premature. Prematurity is an additional risk factor for adult short stature. Premature children born SGA may potentially be affected by combination of the effects of prematurity and SGA status. There are only few reports on premature SGA children treated with rGH.

AIM OF THE STUDY

The aim of the study was to compare the growth response in the first year of rGH treatment short premature and mature children born SGA.

PATIENTS AND METHODS

60 short prepubertal children born SGA aged 6,4±1,8 years

- mass and/or body birth length < -2 SDS
- premature (P-SGA) and full-term (F-SGA)

| children | number | boys | girls |
|----------|--------|----------|----------|
| P-SGA | 23 | 12 (52%) | 11 (48%) |
| F-SGA | 37 | 21 (57%) | 16 (43%) |
| total | 60 | 33 (55%) | 27 (45%) |

- treated with rGH in dose 0,035 mg/kg/day

were assessed (auxological data) at baseline and after 1 year of rGH treatment.

RESULTS

| | P-SGA (n=23) | F-SGA (n=37) | p |
|-------------------------------|--------------|---------------|-------|
| birth weight (g) | 1563 ±478,6 | 2329,5 ±300,9 | <0,05 |
| birth length (cm) | 42,5 ±5,7 | 48,3 ±3,1 | <0,05 |
| gestation age (weeks) | 35,2±2,6 | 39,8±1,3 | <0,05 |
| mid-parenteral height (MPHSD) | -0,86±0,7 | -0,77±0,8 | NS |

At the start of rGH treatment :

| | P-SGA (n=23) | F-SGA (n=37) | p |
|--|--------------|--------------|-------|
| age (years) | 5,2±1,8 | 6,8±1,8 | <0,05 |
| height (cm) | 98,7±11,8 | 106,8±10,0 | <0,05 |
| height (SD) | -4,5±1,0 | -3,3±0,7 | <0,05 |
| difference between patient's height SD and MPHSD | -3,2±1,1 | -2,6±1,1 | <0,05 |
| body weight (kg) | 13,8±3,6 | 16,4±3,7 | <0,05 |
| BMI SD | -1,0±0,8 | -0,9±0,9 | NS |

After the first year of treatment:

| | P-SGA (n=23) | F-SGA (n=37) | p |
|--|--------------|--------------|-------|
| height (cm) | 109,3±11,8 | 116,4±9,4 | <0,05 |
| height (SD) | -2,7±0,9 | -2,3±0,7 | <0,05 |
| (ΔHt) SD /year | 1,4±0,6 | 1,1± 0,5 | NS |
| difference between patient's height SD and MPHSD | -1,9±1,0 | -1,49±1,0 | NS |
| body weight (kg) | 16,6±4,1 | 19,1±4,2 | <0,05 |
| BMI SD | -1,2±0,7 | -1,0±0,7 | NS |

65,2% P-SGA children and 54% F-SGA children showed ΔHt >1SD after one year of treatment

CONCLUSIONS

Premature and full-term short prepubertal SGA children experienced similar height gain in the first year of rGH treatment.

Premature SGA children qualified to rGH treatment were younger and shorter than full-term SGA children.