Empirical change of practice in treatment of growth hormone deficient patients in order to improve 1st year height outcome

K. Rankova, S. Galcheva, V. Mladenov, V. Boyadzhiev, Y. Bocheva, N. Yordanova, Y. Bazdarska, V. Iotova

University Hospital „St. Marina” – Varna, Medical University - Varna

GH has been used for treatment of short stature due to GH deficiency (GHD) for over 60 years.1

1st year growth response to GH treatment is crucial for growth outcome.2

Height velocity in GHD patients decreases with time.2

KEYNOTES GROWTH HORMONE (GH) RESPONSIVENESS

- GH has been used for treatment of short stature due to GH deficiency (GHD) for over 60 years.
- 1st year growth response to GH treatment is crucial for growth outcome.
- Height velocity in GHD patients decreases with time.

OBJECTIVES

The aim of this study is to assess the responsiveness to GH treatment in GHD patients of a newly established treatment center before and after change in starting GH dose.

DESIGN

- 55 children (1-18 years, 76.3% boys)
- Mean age at start of GH therapy: 7.7 ± 3.7 years (0.5 - 14.3)
- A total of 3186 follow-up patient months

Diagnosed with isolated or multiple non-organic GHD

Treated at a tertiary University pediatric endocrinology center during 2011-2018, followed up for at least one full year (n=49)

RESULTS

<table>
<thead>
<tr>
<th></th>
<th>Mean starting GH dose</th>
<th>Mean GH dose at 1 year</th>
<th>Height velocity (HV) at 1 year</th>
<th>ΔSDS height_1_y ≤ 0.5</th>
<th>ΔSDS IGF1 baseline</th>
<th>ΔSDS IGF1 at 1 year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-2016</td>
<td>0.029 ± 0.007 mg/kg/d</td>
<td>0.031 ± 0.01 mg/kg/d</td>
<td>8.9 ± 2.3 cm</td>
<td>36.2 %</td>
<td>- 1.58 ± 0.7 SD</td>
<td>0.7 ± 1.5 SDº</td>
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<tr>
<td>2017-2018</td>
<td>0.030 ± 0.002 mg/kg/d</td>
<td>0.031 ± 0.02 mg/kg/d</td>
<td>9.55 ± 1.0 cm*</td>
<td>25 %</td>
<td>- 0.6 ± 1.32 SD</td>
<td>0.4 ± 0.64 SD</td>
</tr>
</tbody>
</table>

*p=0.003, Height velocity (HV) at 1 year; 2017-2018 vs 2011-2016; *p=0.005, ΔSDS IGF1 0 vs 1 year 2011-2016

CONCLUSION

Higher starting GH dose affects the 1st year GH response which is most important for the adequate treatment results in GHD patients with no additional side effects.

REFERENCES

1. Laron et al. 60 years of hGH. PER, Vol. 16, Suppl. 1, Sept 2018

kamibachvarova@yahoo.com