Final height in congenital adrenal hyperplasia: a retrospective study

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Introduction

- A **compromised final height** (FH) is a concern in patients diagnosed with congenital adrenal hyperplasia (CAH).
- The **lack of achievement of the genetic target height** (TH) can be attributed to treatment with high doses of corticosteroids or high levels of adrenal androgens.
- Despite the emergence of new therapeutic modalities such as the use of anti-androgens and growth hormone it has been shown that a **favorable FH** can be achieved with careful use of corticosteroids.

Objectives

Evaluate the FH in patients with CAH comparing it with the TH, using z-scores (zFH and zTH) from the World Health Organization height-for-age Child Growth Standards.

Methods

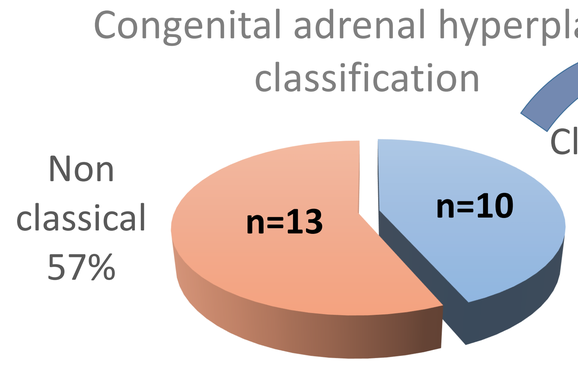
Retrospective study with review of clinical processes of pediatric patients followed in the Pediatric Endocrinology Unit of Hospital Pedro Hispano – Matosinhos, Portugal.

Inclusion criteria: patients who had achieved FH (growth velocity <0.5cm in the last year, estimated by 2 consecutive measures separated by a period of 6-12 months)

Methods: the patients heights were transformed in z-scores (standard deviations) using the 2007 WHO growth curves

- Final height (zFH)
- Target height (zTH)
- Corrected final height (zCFH): zFH - zTH

Results



23 patients: 8 ♂ 15 ♀

20 patients

Corticosteroids started at the neonatal period: 8
Remaining patients → mean age of onset of treatment: 10,6 years

Salt losers: 7
Simple virilizing: 3

12 of the 20 patients achieved TH

Height	n=20	Classical Form	Non- Classical Form	p
FH	-0.76 (-1.52; 0,44)	-0.22 (-1.03; 0.61)	-1.26 (-1.67; -0.12)	0.144
TH	-0.92 (-1.29; 0,14)	-0.62 (-1.57; 0.31)	-1.03(-1.10; -0.35)	0.656
CFH	0.09 (-017;0.56)	0.20 (-0.11;0.63)	0.01 (0.59; 0.61)	0.370

Median (P25; P75)

There was no significant difference in corrected final height between classical and non-classical forms

Patients who reached TH → mean height difference: +3,98cm
Patients who do not reached TH → mean height difference: - 3,69cm

Patients	CAH	TH (cm)	zTH	FH (cm)	zFH	zCFH
1	Non-classical	163,0	-1,86	163,8	-1,75	0,11
2	Non-classical	168,5	-1,10	170,5	-0,83	0,27
3	Non-classical	158,5	-0,56	149,1	-1,94	-1,38
4	Non-classical	156,0	-1,09	154,9	-1,26	-0,17
5	Non-classical	160,0	-0,13	168,0	1,03	1,16
6	Non-classical	170,5	-0,80	166,1	-1,39	-0,59
7	Non-classical	154,0	-1,33	152,9	-1,50	-0,17
8	Non-classical	156,0	-1,07	156,1	-1,06	0,01
9	Non-classical	162,0	-0,18	166,0	0,43	0,61
10	Non-classical	169,0	-1,03	183,0	0,88	1,91
11	Non-classical	174,0	-0,35	163,0	-1,86	-1,51
12	Classical	151,5	-1,78	150,5	-1,93	-0,15
13	Classical	155,5	-1,17	161,7	-0,22	0,95
14	Classical	172,0	-0,62	171,5	-0,69	-0,07
15	Classical	171,5	1,28	172,0	1,35	0,07
16	Classical	151,5	-1,68	153,6	-1,37	0,31
17	Classical	153,0	.1,46	158,7	0,61	0,85
18	Classical	178,0	0,34	181,0	0,74	0,40
19	Classical	164,5	0,25	163,5	0,11	-0,14
20	Classical	165,0	0,28	166,3	0,48	0,20

Conclusions

- ✓ The authors were able to conclude that, in their sample, although the FH was inferior to the average height in general population, the majority of patients achieved their genetic potential for height.
- ✓ Differences in bone age, time of diagnosis and early initiation of treatment can be key factors in the final height outcome, however the use of corticosteroid therapy alone allowed, in this sample, the achievement of the TH.

References: Muthusamy K. et al. Adult height in patients with congenital adrenal hyperplasia: a systematic review and metaanalysis. *J Clin Endocrinol Metab*, September 2010, 95(9):4161-4172; Eugster E. et al. Height outcome in congenital adrenal hyperplasia caused by 21-hydroxylase deficiency: a meta-analysis. *The Journal of Pediatrics*, January 2001, 138(1):26-32; Lemos-Marini S. et al. Hiperplasia congênita das supra-renais por deficiência da 21-hidroxilase: altura final de 27 pacientes com a forma clássica. *Arq Bras Endocrinol Metab*, December 2005, 49(6):902-907.

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Adrenal

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