Reevaluation of GH secretion during puberty in children diagnosed as GH-deficient during childhood

Ramaroli DA[1], Piona CA[1], Maines E[1], Morandi G[1], Gaudino R[1], Antoniazzi F[1]

[1]Department of Life and Reproduction Sciences, Paediatric Clinic, University of Verona, Verona, Italy

Background:

Growth hormone (GH) secretion increases physiologically during puberty and GH levels correlate with pubertal stage. Therefore, puberty is the most likely time for normalization of GH secretion in children with GH deficiency (GHD). No studies have so far evaluated in children diagnosed as GH-deficient during childhood potential predictors of response to the reevaluation of GH secretion during puberty.

Objective:

The aim of our study is to establish and compare the characteristics of children with isolated GHD who normalized GH secretion during puberty (**group A**) compared with those who showed a persistently deficient secretion (**group B**).

Method:

Auxological data and GH peak level at initial diagnosis and at reevaluation of GH secretion during puberty were evaluated in 58 children (35 boys, 23 girls) diagnosed with GHD by means of arginine and insulin or glucagon tests (peak < 7 µg/L) during childhood. All children underwent reevaluation of GH secretion by mean of arginine test during puberty.

Results:

39 subjects (67.2%) normalized GH secretion and 19 subjects (32.7%) confirmed GHD.

No significant differences were observed at diagnosis between the two groups in the mean height standard deviation (SD) (-2.47 ± 0.53 SD in group A and -2.43 ± 0.38 SD in group B) and in the mean difference between chronological age (CA) and bone age (BA) (1.62 ± 1.25 y in group A and 1.64 ± 1.17 y in group B).

GH peak level by mean of arginine test in patients classified as having persistent GHD was significantly lower than patients with normalized GH secretion (3.81 ± 2.72 µg/L vs 5.24 ± 2.34; p=0.028) (Tab.1).

	GROUP A (N 39)	GROUP B (N 19)
Mean height (SD) at diagnosis	-2.47 ± 0.53	-2.43 ± 0.38
Mean difference between CA and BA (years) at diagnosis	1.62 ± 1.25	1.64 ± 1.17
GH peak level at the pre-treatment Arginine test (µg/L)	5.24 ± 2.34	3.81 ± 2.72

Conclusions:

As regard of the results, **in children diagnosed as affected by GHD during childhood seems convenient to reevaluate GHD during puberty. Children with lower levels of GH peak value by mean of arginine test at diagnosis seem to have more probabilities to keep GHD during puberty.**

References:

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