Does priming with sex steroids before growth hormone stimulation test increase the diagnosis of normal GH secretion in short children?

Ashraf Soliman #, Ashraf Adel, Aml Sabt, Elkhansa Elbukhari, Hannah Ahmed, Fawzia Alyafei, Randa Nassar

Departments of Pediatrics Hamad Medical Center, Doha Qatar 1, and Alexandria University #Alexandria Egypt

Introduction

There is still controversy for priming with sex steroid before GH testing among endocrinologists.

Patients and methods

we studied GH response to stimulation in 92 children > 9 years short stature (HtSDS -2). They were divided randomly into 2 groups.

1. Children in group 1 (n= 50) were primed with premarin (0.3 mg PO daily for 3 days) in girls and testosterone (25 mg testosterone enanthate IM once 3 days before the test) in boys.
2. Children in group 2 were not primed (n=42) .
3. A third group 3 (n = 32) of short children (HtSDS <-2) below 9 years of age who were also non-primed before GH testing (group 3) were used as controls.

compared

All children were tested using standard clonidine test and their serum insulin-like growth factor –I concentration (IGF-I) measured.

Results

		Age	HtSDS
Primed > 9 y	Mean	12.0	-2.1
n = 50	SD	1.5	0.3
Non primed > 9 y	Mean	12.5	-2.2
n= 42	SD	1.4	-0.3
Non primed <9 y	Mean	7.2	-2.2
n =32	SD	1.6	-0.4

Neither GH peak response to provocation nor IGF-I concentrations differed between the two groups with and without priming.

RESULTS

		Basal GH	Peak GH	IGF1
Primed > 9 y	Mean	1.5	11.4	164.1
n = 50	SD	3.1	6.4	77.6
Non primed > 9 y	Mean	3.0	10.5	157
n= 42	SD	4.4	7.5	50
Non primed <9 y	Mean	3.0	10.5	160.7
n =32	SD	4.4	7.5	57.9

Discussion

Taking a cut-level of 10 ug/L for normal GH response to clonidine , priming with sex steroids did not significantly increase the % of patients with normal GH response (52 %) versus non-priming (47%).

IGF-I level did not show any significant difference among the two studied groups > 9 y. The peak GH response to clonidine provocation did not differ before (n = 42) versus after 9 years (n = 32) of age.

Conclusion

In this randomized study priming with sex steroids before GH testing did not significantly increase the yield of diagnosing short patients with normal GH secretion.

In addition, GH response to provocation did not vary significantly between young (< 9 years) and old (> 9 years) short children.

مؤسسة حمد الطبية
Hamad Medical Corporation