Health lifestyle and obesity of adult patients with Congenital Isolated Growth Hormone Deficiency treated in childhood.

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Introduction

Treatment of patients with childhood Growth Hormone deficiency is usually terminated at the end of puberty. Follow up into adult age is rare, even more so in patients with congenital Isolated Growth Hormone Deficiency (cIGHD).

Aim

The aims of the study were to assess the clinical and social characteristics of adults with cIGHD who received Growth Hormone (hGH) treatment in childhood.

Method and Subjects

The data of 39 patients (23 men, 16 women) with cIGHD diagnosed in our clinic were followed into adult age (mean age 30.7 ± 13.3y). All were treated by hGH in childhood. Starting age was 7 ± 4.3 (y) and duration was 2-18 (y). Out of this cohort of patients, ascertained detailed data was found for 32 patients.

Results

The demographic, genetic and main clinical results are shown in Table 1. The mean (± SD) height for the men was 160.2 ± 10.6 cm, and for the women 146.4 ± 5.4 cm. All had full sexual development and 14 are married. After cessation of GH treatment and with advancing age all had progressive increase in adiposity to the degree of obesity as shown by subscapular skinfold thickness and missed by BMI (Figure 2). Twelve patients suffer from hyperlipidemia, 4 developed diabetes mellitus, and 5 have cardiovascular diseases. One patient died by an accident. None developed cancer. Twenty two patients have an education level of high school or higher and 2 are in special institutions. Taller patients tended to have a better education and occupation than the shorter patients (figures 3,4) .

Image

Table 1: Genetic and clinical data of 32 adult patients with congenital isolated growth hormone deficiency

Patient No.	Gender	Ethnic origin	Genotype	Age at initiation of treatment (yrs)	Duration of treatment (yrs)	At study					
						Age (yrs)	Height (cm)	Height (SDS)	Weight (kg)	BMI	Subscapular Skinfold (mm)
1 [a]	man	Middle East	hGH-1A del.	4.6	12.4	54	160.8	-2.09	67.4	26.1	23
2 [a]	man	Middle East		13.6	2.5	43	119.3	-8.33	31	21.8	26
3	man	Middle East		2.5	13.6	48	158	-2.51	70	28.0	40
4	man	Middle East		0.1	15.9	32	162.8	-1.79	66.5	25.1	23
5 [b]	man	Middle East		15.6	1.5	35	143	-4.77	36	17.6	12
6 [b]	man	Middle East		13.7	2	32	138	-5.52	40	21.0	14
7	man	Ashkenazi		4	14.4	30	161.6	-1.97	67.5	25.8	28
8	man	Ashkenazi		9	7.1	20	161.5	-1.98	50.5	19.4	12
9	man	Ashkenazi		13.11	6.1	34	178	0.50	103	32.5	31
10	man	Ashkenazi		4.6	13.5	35	176.7	0.30	59	18.9	7
11	man	Israel		10.8	7.2	48	156	-2.81	55	22.6	21
12	man	Arab		N/A	N/A	66	131.9	-6.44	35.5	20.4	22
13	man	Russia-N. Africa		5.6	12.4	41	175.5	0.12	100	32.5	25
14	man	Russia-USA		5	13	37	161	-2.06	52.5	20.3	8
15	man	North Africa		6.8	11.5	46	153.6	-3.17	44.5	18.9	15
16 [c]	man	North Africa		3	18	27	172	-0.41	66.7	22.5	N/A
17 [c]	man	North Africa		1	23	22	166	-1.31	42	15.2	N/A
18 [c]	woman	North Africa		11	5.9	50	141	-3.53	40	20.1	25
19 [d]	woman	North Africa		7.1	7.9	41	144.6	-2.93	41.5	19.8	6
20 [d]	woman	North Africa		12.6	3.6	52	144.8	-2.90	43	20.5	16
21 [e]	woman	North Africa		11.4	4.1	52	144.1	-3.02	59.6	28.7	31
22 [e]	woman	North Africa		3.11	11.8	23	146.3	-2.65	66.5	31.1	32
23	woman	North Africa		9	7	26	139.4	-3.80	50	25.7	20
24	woman	North Africa		4.5	9.8	43	152.3	-1.65	58	25.0	18
25	woman	Middle East		1.1	12.1	34	151	-1.87	54	23.7	27
26	woman	Middle East		1	12	40	139.5	-3.78	42	21.6	39
27	woman	Middle East		3.6	10.5	49	149.5	-2.12	66	29.5	32
28 [f]	woman	Arab	GHRH-R mutation	6.7	9.8	21	156.5	-0.95	38	15.5	17
29 [f]	man	Arab		6.3	12.7	22	167	-1.16	56	20.1	17
30 [f]	man	Arab		6.6	10.5	33	170	-0.71	52	18.0	13
31 [f]	man	Arab		10.2	8.8	31	156.3	-2.77	72	29.5	38
32	man	Arab		10	5.6	22	143.3	-4.72	49	23.9	13

[a] Family 1, b Family 2, c Family 3, d Family 4, e Family 5, f Family 6

Image

Figure 2: The discrepancy between subscapular skinfold thickness and BMI in 28 adult patients with congenital IGHD.

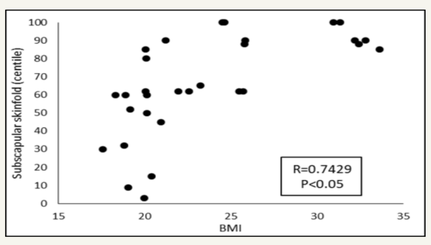


Figure 3: Adult height and education of 28 adults with congenital isolated growth hormone deficiency.

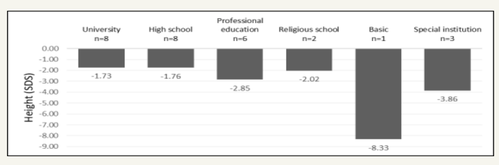
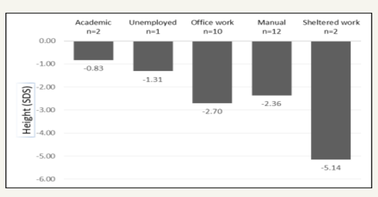


Figure 4: Adult height and occupation of 27 adults with congenital isolated growth hormone deficiency.



Conclusion

The Patients with congenital IGHD who do not receive early and regular replacement treatment are prone to lag in achieving normal height and suffer from educational and vocational handicaps.