

Adult height of girls with idiopathic central precocious puberty treated with GnRH analogs: has the body mass index any role?



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Background

GnRH analogs (GnRHa) have been used in treatment of idiopathic central precocious puberty (ICPP) for several decades. Their effectiveness on adult height (AH) improvement has been widely studied and is still debated.

Objective and hypotheses

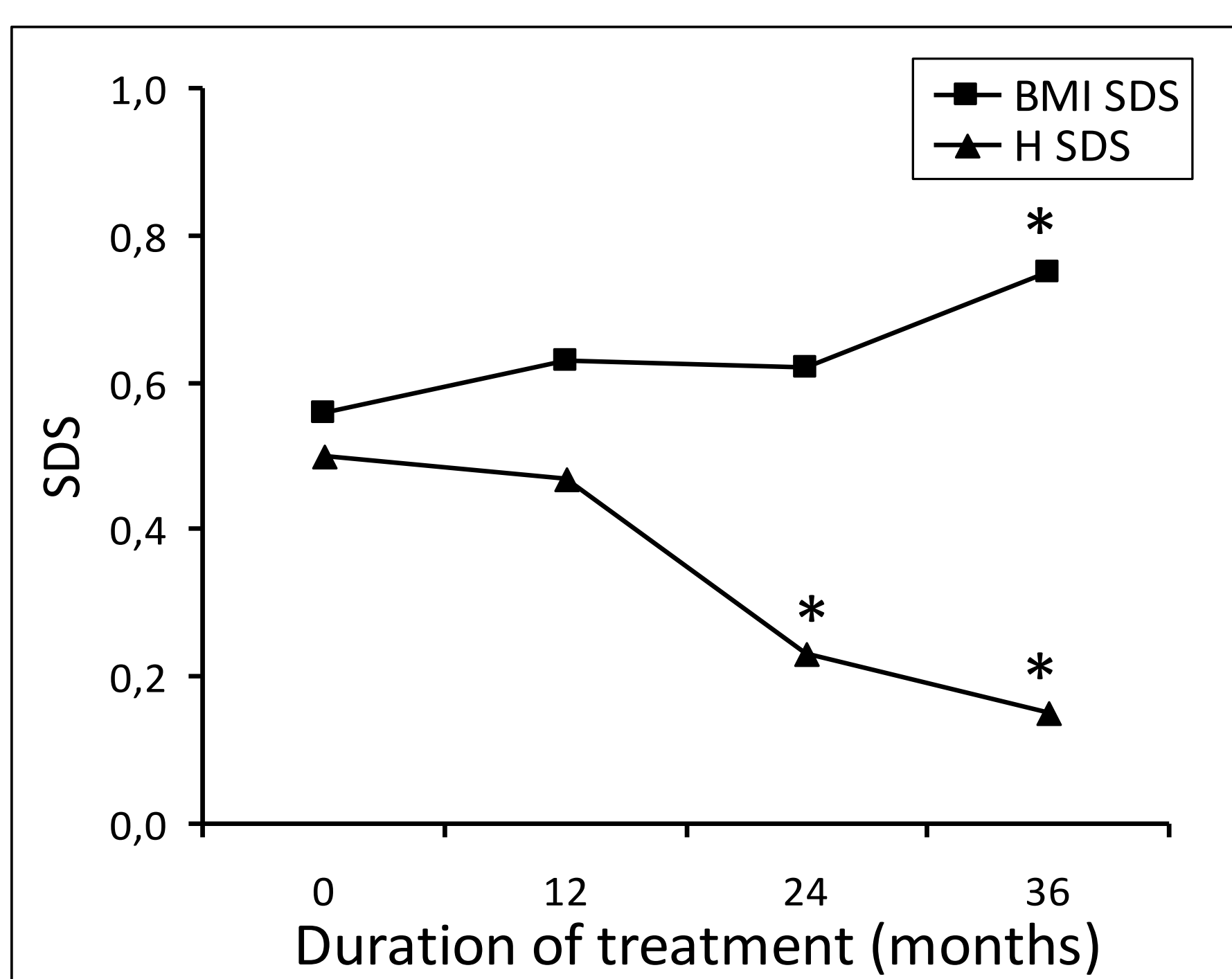
To assess whether BMI changes in ICPP girls during GnRHa treatment can influence AH.

Method

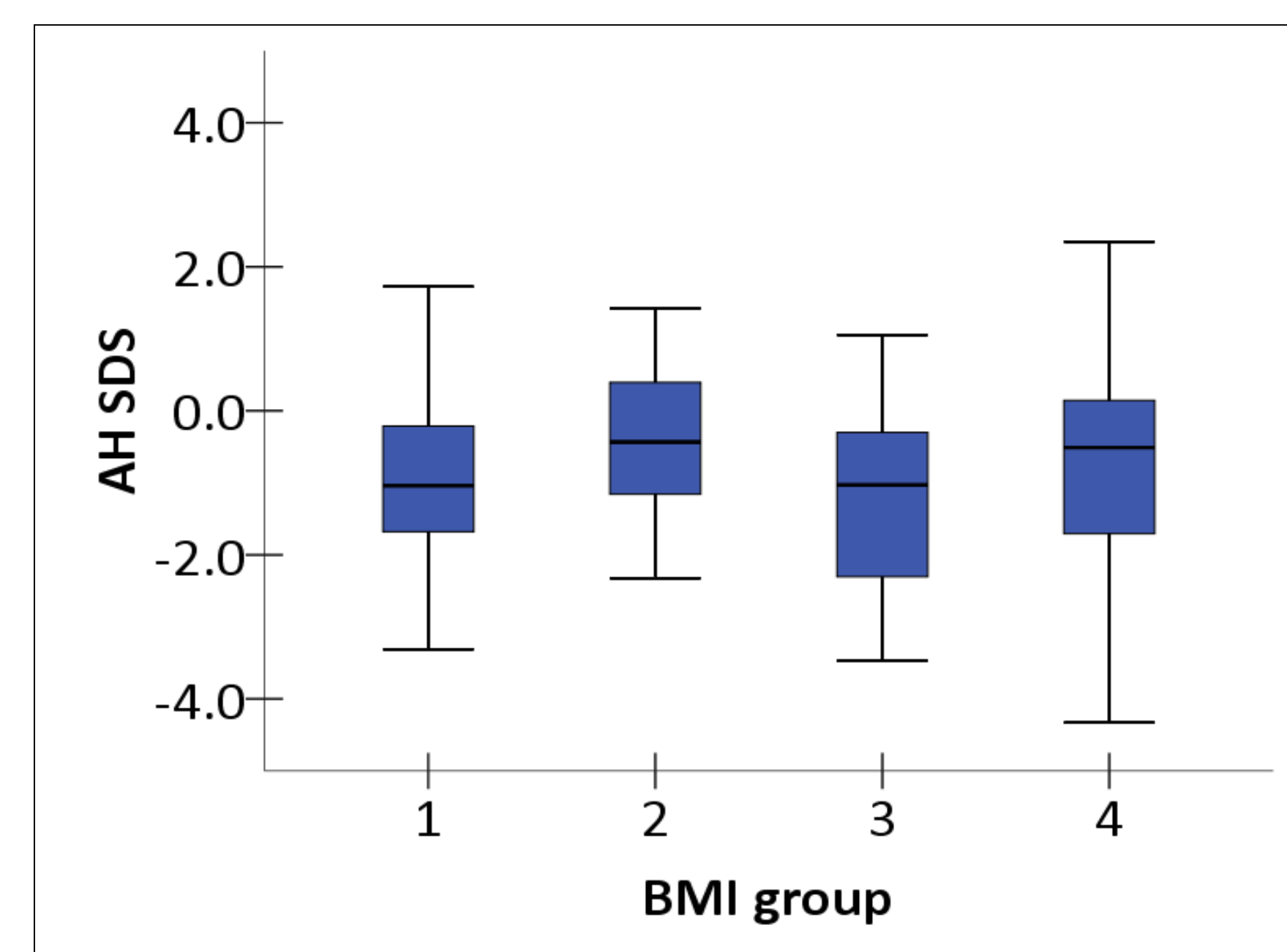
A retrospective study of 131 ICPP girls (mean age at diagnosis: 7.6 ± 0.7 , range 4.3-9.0 years), treated for a period of 29.3 ± 7.6 months, was performed.

Data on chronological age (CA), height (H), bone age (BA), BMI, predicted AH (PAH), target height (TH) were collected. In relation to BMI SDS at the begin and at the end of GnRHa treatment, patients were categorized in 4 groups: persistent normal weight (Group 1), normal weight who became overweight or obese (Group 2), overweight or obese who became normal weight (Group 3), persistent overweight or obese (Group 4).

Results



*p <0.05 compared to before treatment



	Group 1 (n.64)	Group 2 (n.20)	Group 3 (n.16)	Group 4 (n.30)	p
Onset of therapy					
CA (yrs)	7.7±0.6	7.6±0.6	7.6±0.6	7.6±0.8	0.925
BA minus CA (yrs)	2.0±0.8	2.4±0.8	2.5±0.6	2.5±0.8	0.003
H (SDS)	0.2±1.1	0.9±1.3	0.3±1.0	0.9±1.2	0.018
BMI (SDS)	-0.2±0.8	0.7±0.3	1.3±0.2	1.6±0.4	0.001
PAH (SDS)	-1.5±1.1	-1.1±1.0	-2.0±0.9	-1.4±1.4	0.138
Treatment stop					
CA (yrs)	10.3±0.7	10.0±0.5	10.1±0.6	10.0±0.7	0.125
BA minus CA change (yrs)	-0.6±0.6	-0.4±0.6	-0.7±0.4	-0.5±0.6	0.460
H (SDS)	-0.1±0.9	0.6±1.2	-0.01±0.9	0.5±1.1	0.007
BMI (SDS)	0.2±0.6	1.3±0.2	0.7±0.3	1.7±0.4	0.001
Duration of treatment (mths)	30.1±8.3	28.8±6.9	29.3±5.7	27.9±7.4	0.582
Menarche (yrs)	11.7±0.7	11.5±0.7	11.8±0.7	11.5±0.7	0.438
AH minus TH (SDS)	0.2±1.1	0.4±0.8	0.03±1.0	0.3±1.2	0.817
AH minus PAH (SDS)	0.4±0.8	0.7±0.8	0.8±1.0	0.6±1.0	0.443

Conclusions

A moderate increment in BMI was overall observed in our cohort. However, BMI modifications during GnRHa treatment do not seem to influence adult height outcome in our population.