

Effect on BMI of GnRH Analogue Treatment in CPP or EFP Girls

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Objective:

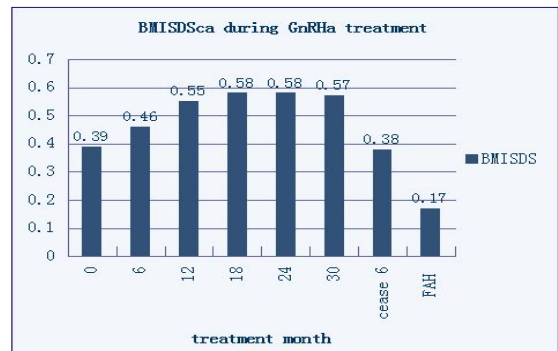
We assessed in a retrospective unicenter study the effect on BMI of treatment with GnRH analogs (GnRHa) in central precocious puberty (CPP) or early and fast puberty (EFP) girls.

Methods:

The BMI of 318 girls (227 CPP and 91 EFP) who treated with GnRHa alone were analyzed. Among them 89 were followed up to their final adult height (FAH).

Results:

Before GnRHa treatment started, the girls with CPP and EFP had a mean BMI SDS for chronological age (CA) of 0.39 ± 0.84 and for bone age (BA) of -0.11 ± 0.69 . At the end of treatment, the mean BMI SDS was 0.59 ± 1.00 for CA and 0.24 ± 0.85 for BA, which both were significantly higher than initiation. The increment of BMI SDS for BA (0.38 ± 0.56) was larger than for CA (0.21 ± 0.59). Moreover, the ratio of overweight (BMI >85%) was significantly elevated. BMI SDS for CA of 89 girls who were visited at their FAH were 0.17 ± 1.73 , which were similar with BMI SDS at initiation and normal population.



Treatment month	0	6	12	18	24	30	Cease 6	FAH
BMISDS	0.39	0.46*	0.55*	0.58*	0.58	0.57	0.38*	0.17*

* compare with last time $P < 0.05$

Conclusion:

The mean BMI SDS for CA of CPP and EFP was significantly higher than population, while for BA was significantly lower. During GnRHa treatment, there was an obese tendency and which was reversible. At FAH, the mean BMI SDS was back to normal.

Table 1 Parameters when start and withdraw treatment of GnRHa

GnRHa treatment	case	Age	BA	BMI	BMI SDS for age	BMI SDS for BA
start	318	8.6 ± 1.3	10.7 ± 1.2	16.5 ± 1.9	0.38 ± 0.84^a	-0.11 ± 0.69^a
withdraw	318	10.8 ± 1.1	11.8 ± 0.9	18.1 ± 2.5	0.59 ± 1.01^{ab}	0.24 ± 0.89^{ab}

a: compare with normal population $P < 0.01$; b: withdraw vs start, $P < 0.001$.