

Psychosocial changes after GnRH agonist treatment in girls with idiopathic central precocious puberty

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Background

In precocious puberty, girls experienced secondary sexual development earlier psychologically as well as physically. Self-stress due to a different body shape from the peer group, psychological concerns due to discrepancies between physical and chronological age, and long-term behavioral problems could occur.

Objective and hypotheses

The aim of this study was to evaluate psychosocial changes in girls with precocious puberty between before and after treatment.

Method

The girls with idiopathic central precocious puberty whose parents completed the Korean-Child Behavior Checklist (K-CBCL) (n=66) and Children's Depression Inventory (CDI) (n=61) were enrolled in this study. K-CBCL and CDI were checked at diagnosis and 1 year after treatment with GnRH agonist. T score was used in K-CBCL for statistical analysis.

Results

In K-CBCL, T score of problem behavior total score was significantly lower at 1 year after treatment than at diagnosis (P=0.000). T scores of Anxiety/Depression, Atrophy/Depression, Aggressive behavior, Social immaturity and Other problem were significantly lower, respectively. T scores of Affective problems, Anxiety problems and Oppositional defiant problems were significantly lower. T score of Post-traumatic stress problems was significantly lower. T score of Academic performance was significantly higher. In CDI, Score was significantly lower at 1 year after treatment than before treatment.

K-CBCL

Table 1. Problem behavior syndrome scales

Rating scale	Baseline	Post Treatments	P
Problem behavior total score* (<60)	54.68 ± 10.07	48.77 ± 11.20	< 0.001
Internalization scales* (<60)	54.08 ± 10.01	49.33 ± 8.58	< 0.001
Anxiety / Depression† (<65)	56.05 ± 7.87	53.11 ± 4.88	0.002
Atrophy / Depression† (<65)	55.80 ± 5.77	53.41 ± 5.15	0.001
Somatic complaints† (<65)	54.59 ± 6.11	53.15 ± 4.95	0.068
Externalization scales* (<60)	53.97 ± 10.06	49.94 ± 8.78	< 0.001
Rule-breaking behavior† (<65)	54.30 ± 5.59	53.35 ± 4.82	0.197
Aggressive behavior† (<65)	55.88 ± 6.88	53.55 ± 5.54	< 0.001
Social immaturity† (<65)	54.88 ± 6.60	53.29 ± 5.06	0.038
Thought problems† (<65)	55.71 ± 6.50	54.26 ± 5.54	0.053
Attention problems† (<65)	55.02 ± 7.53	54.42 ± 6.78	0.301
Other problems† (<65)	57.50 ± 7.79	53.98 ± 5.74	< 0.001

* Clinical range : > 63 Borderline clinical range : 60 ~ 63 for upper 3 scales
 † Clinical range : > 69 Borderline clinical range : 65 ~ 69 for lower 9 scales

Table 2. DSM oriented scales

Rating scale	Baseline	Post Treatments	P-Value
Affective problems (< 65)	54.61 ± 6.65	51.91 ± 5.94	0.003
Anxiety problems (< 65)	56.15 ± 7.92	53.95 ± 5.72	0.018
Somatic problems (< 65)	53.76 ± 5.83	53.11 ± 5.26	0.439
Attention deficit hyperactivity problems (ADHD) (< 65)	54.95 ± 7.73	53.68 ± 6.76	0.081
Oppositional defiant problems (< 65)	55.02 ± 7.03	53.42 ± 4.94	0.013
Conduct problems (< 65)	52.92 ± 5.44	52.62 ± 4.57	0.615

* Clinical range : >70 Borderline clinical range : 65 ~70

Table 3. Problem behavior special scales

Rating scale	Baseline	Post Treatments	P-Value
Obsessive-compulsive problems (< 65)	54.79 ± 7.49	54.74 ± 5.56	0.272
Post-traumatic stress problems (< 65)	55.74 ± 6.43	54.12 ± 6.05	0.024
Sluggish cognitive tempo (< 65)	55.82 ± 7.47	53.48 ± 5.75	0.083

* Clinical range : >70 Borderline clinical range : 65 ~70

Table 4. Adaptation scales

Rating scale	Baseline	Post Treatments	P-Value
Sociality (>35)	50.24 ± 8.24	50.23 ± 10.77	0.991
Academic performance (>35)	52.15 ± 6.48	54.83 ± 6.72	0.003
Adaptation scale total score (>40)	51.74 ± 7.83	53.32 ± 11.50	0.266

* Clinical range : <30 Borderline clinical range : 30 ~ 35 for upper 2 scales
 * Clinical range : <35 Borderline clinical range : 35 ~ 40 for lower 1 scales

CDI

Table 5. CDI score

Variable	Baseline	Post-Treatments	P-Value
CDI	6.5±6.0	4.9±4.7	0.043

Reference range : >21 (depressive state)

Treatment Response

Table 6. No. of patients in clinical range

Scales	Baseline	Post-Treatments
K-CBCL	14 / 66 (21.2%)	7 / 66 (10.6%)
CDI	1 / 61 (1.6%)	0 / 61 (0%)

Table 7. No. of patients in borderline clinical range

Scales	Baseline	Post-Treatments
K-CBCL	21 / 66 (31.8%)	9 / 66 (13.6%)

Conclusions

In idiopathic central precocious puberty, psychosocial problems as well as physical changes may be improved by suppression of sex steroids after treatment with GnRH agonist.