Serum anti-Müllerian hormone and inhibin B as potential markers for progressive central precocious puberty in girls

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OBJECTIVES

To investigate the potential of serum anti-Müllerian hormone (AMH) and inhibin B (INHB) levels as markers for pubertal progression rate in girls with central precocious puberty (CPP).

METHODS

A total of 128 girls were enrolled, including 65 girls with premature thelarche (PT) and 63 girls with CPP, grouped based on the results of Gonadotropin-releasing hormone (GnRH) stimulation tests. Serum AMH and INHB levels were assessed in all enrolled girls. Girls with CPP underwent a six-month follow-up, and were further divided into two subgroups: progressive CPP (P-CPP) group (n=50) and slowly progressive CPP (SP-CPP) group (n=13).

RESULTS

Our data showed that AMH and INHB offer the potential to act as markers that distinguish SP-CPP from P-CPP. Compared with SP-CPP group, girls with P-CPP showed lower AMH level (2.79 (1.04-6.16) ng/mL vs 4.82 (1.94-11.15) ng/mL, p=0.0047) and higher INHB level (56.94 (16.54-123.60) pg/mL vs 27.61(19.46-67.48) pg/mL, p=0.1628). Based on the receiver operating characteristics (ROC) analysis, the area under the curve (AUC) was 0.88 for the combination of AMH and INHB, with 93% sensitivity and 71.5% specificity.

CONCLUSIONS

Our results suggest that serum AMH and INHB levels provide a reliable method in differentiating SP-CPP from P-CPP.

Table 1. Clinical and ultrasound characteristics of the four groups. Data are expressed as median (range). * p < 0.05: significantly different compared to subjects with controls. & p < 0.05: significantly different compared to subjects with PT group.

References


Figure 1. Serum AMH (A) and INHB (B) levels in girls.

Figure 2. ROC curves for the analysis of AMH and INHB (A), and basal and peak LH (B).