GnRHa treatment significantly improved the growth potential of boys with EP. PAH after 2 years of treatment was positively correlated with PAH at the start of treatment. Organic CNS lesions were not frequent as an etiology of EP.

**CONCLUSIONS**

**OBJECTIVES**

Early puberty (EP) can be defined as the development of secondary sexual characteristics between the age of 9 and 11 years in boys. Gonadotropin-releasing hormone agonist (GnRHa) may be used in boys with early puberty.

We investigated (1) the effects of GnRHa treatment on auxological outcomes in Korean boys with early puberty and (2) the etiology of EP, including the possibility of organic brain lesions, by brain magnetic resonance imaging (MRI).

**METHODS**

The clinical records of 33 Korean boys with EP who were treated with GnRHa for more than 2 years at Ajou University Hospital in Suwon, Korea, from 2003 to 2013 were reviewed. EP was diagnosed according to the following criteria: (1) objective testicular volume of ≥4 mL between 9.0 and 10.9 years of age, (2) advanced bone age (BA) >1 year above chronological age (CA), and (3) pubertal luteinizing hormone (LH) peak values (cut-off value of ≥15 IU/L) with GnRH stimulation tests performed between 9.0 and 10.9 years of age. The patients were retrospectively divided into two groups: group 1 subjects (n = 17) were diagnosed with EP and received GnRHa treatment between 9.0 and 9.9 years of age, and group 2 subjects (n = 16) were diagnosed with EP and received GnRHa treatment between 10.0 and 10.9 years of age. Fifteen boys underwent MRI studies of the hypothalamic-pituitary area. The standard treatment regimen was the administration of subcutaneous leuprolide-acetate or triptorelin-acetate at 3.75 mg every 4 weeks. GnRHa was discontinued at a BA of close to 14 years.

**RESULTS**

**Effects of GnRHa Treatment**

There was a significant increase in PAH SDS after 2 years of treatment in group 1 (p < 0.001) and group 2 (p < 0.001). In group 1, PAH SDS increased from -0.39 ± 1.03 after 1 year of treatment to -0.03 ± 1.06 after 2 years of treatment (p < 0.001). In group 2, PAH SDS increased from -0.41 ± 0.97 after 1 year of treatment to -0.24 ± 1.05 after 2 years of treatment (p < 0.001).

**Organic CNS Lesion as Etiology of EP**

Sellar MRI was performed in 15 patients in group 1 (Table 1). An MRI abnormality was detected in 1 of 15 (6.7%) boys with EP. The one boy with the MRI abnormality was diagnosed with pituitary hyperplasia at 9.60 years of CA. He had no hormonal abnormalities and received GnRHa alone.

**REFERENCES:**