



# Commentary on "Effect of gonadotropin-releasing hormone agonist treatment on near final height in girls with central precocious puberty and early puberty"

Ahreum Kwon

Department of Pediatrics, Severance Children's Hospital, Institute of Endocrinology, Yonsei University College of Medicine, Seoul, Korea

The definition of precocious puberty (PP) is the onset of secondary sex characteristics before the age of 8 in girls and 9 in boys. The periodic administration of gonadotropin-releasing hormone (GnRH) agonists are recommended for patients with PP as the condition not only causes psychosocial problems but also results in a loss of final adult height. Several studies evaluated the efficacy of GnRH agonists, particularly on final height, in patients with PP.<sup>1-3)</sup> Recently, with the diversification of GnRH agonist types and the development of long-acting depots, a comparison was made between the efficacy of 1-month and 3-month depots of GnRH agonists in girls with central PP.<sup>4)</sup> To achieve better final height, early initiation and a long duration of GnRH agonist treatment is recommended. The greatest benefit of GnRH agonist treatment is obtained in girls who begin treatment before the age of 6, while those who start treatment between the ages of 6 and 8 have varying outcomes.<sup>5,6)</sup>

In contrast, early puberty (EP) is defined as the onset of secondary sex characteristics between the ages of 8–9 years in girls and 9–10 years in boys. Although the rapid progression of puberty in patients with EP also leads to loss of their final height, the efficacy of GnRH agonist treatment in these patients on final height has not yet been sufficiently defined. In several studies, the final adult height was reported to be similar between the group treated with GnRH agonists and the group without treatment in girls with EP.<sup>7-9)</sup>

Yang et al.<sup>10)</sup> conducted a study on the effect of GnRH agonist treatment on near final height in girls with both central PP (CPP) and EP. Their results demonstrated that GnRH agonist treatment improved near final height not only in the CPP group but also in the EP group. In the EP group, GnRH agonist treatment also delayed bone age, with a greater difference between bone age and chronological age at the treatment start resulting in a better final height gain. This study is significant as it indicates that GnRH agonist treatment may aid in maintaining final height in patients with EP. However, since this contradicts previous research, it is too soon to draw definitive conclusions. Thus, larger-scale case-control prospective studies are required to confirm the efficacy of GnRH agonist treatment in patients with EP.

See the article "Effect of gonadotropin-releasing hormone agonist treatment on near final height in girls with central precocious puberty and early puberty" via <https://doi.org/10.6065/apem.2142250.125>.

**Conflicts of interest:** No potential conflict of interest relevant to this article was reported.

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## Address for correspondence:

Ahreum Kwon  
Department of Pediatrics, Severance Children's Hospital, Institute of Endocrinology, Yonsei University College of Medicine, 50-1 Yonsei-ro, Seodaemun-gu, Seoul 03722, Korea  
Email: armea@yuhs.ac  
<https://orcid.org/0000-0002-9692-2135>

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