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Efficacy of 3-Monthly Triptorelin Pamoate Compared to Monthly Depot in the treatment of Korean girls with Central precocious puberty

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BACKGROUND

Triptorelin pamoate (TP) depot is largely used to treat central precocious puberty (CPP) in children and currently 3 monthly depot was introduced. No Korean data are available on 3-monthly GnRH agonist treatment in CPP

OBJECTIVE

To compare the efficacy of TP 11.25mg 3-months depot with 3.75mg monthly depot in suppressing pubertal development from the beginning to 6 month and 1 year after the treatment of CPP.

METHODS

A retrospective study of 95 patients with CPP treated with TP from 2015 to 2019 was conducted. 51 patients out of 95 were treated with TP 11.25mg 3-monthly depot and 44 patients were treated with TP 3.75mg monthly depot. Serum luteinizing hormone (LH), follicle stimulating hormone (FSH) and estradiol level after each depot was analyzed. Pubertal score, height and bone age were evaluated at the beginning, after the 6 months and one year of both therapies.

RESULTS

Table 1. Baseline Characteristics of TP 3 monthly depot and monthly depot

	TP 3 monthly (n=51)	TP monthly (n=44)	*p*-value
Age	8.33±0.53†	8.43±0.62	0.390*
MPH	160.72±3.64	161.34±3.38	0.453
Height	132.77±6.67	136.13±5.69	0.010
Weight	31.26±6.09	35.01±6.05	0.004
BMI	17.62±2.57	18.81±2.54	0.026
Ht SDS	0.79±1.00	1.31±0.84	0.008
Wt SDS	0.72±1.13	1.35±1.24	0.011
BMI SDS	0.39±1.13	0.88±1.14	0.038
tanner	2.0 [2.0-2.5] ‡	2.5 [2.0-3.0]	0.004
Bone age	10.18±0.65	10.27±0.61	0.460
Peak LH	19.11±23.00	20.51±20.40	0.755
Peak FSH	14.28±9.70	13.58±4.36	0.660
E2	1.67±7.63	1.77±4.37	0.936
BA-CA	1.85±0.51	1.84±0.52	0.963

* Statistical significance was evaluated by t-test
† Mean ± Standard deviation
‡ Statistical significance was evaluated by Menn-Whitney U test

Table 2. GnRH-stimulated LH≤3 IU/l, and LH and FSH concentrations in the TP 3 monthly depot and TP monthly depot

Time	LH					
	LH ≤ 3 IU/l, n/total n (%)			LH, IU/l mean		
	TP 3 month	TP month	*P*-value	TP 3 month	TP month	*P*-value
Baseline	0/51 (0)	0/44 (0)	-	19.1±23.0*	20.5±20.4	0.755 †
6 month	46/50 (92.0)	44/44 (100)	0.055‡	1.5±1.3	0.7±0.4	<0.001
1 year	33/35 (94.3)	44/44 (100)	0.108	1.3±0.9	0.5±0.4	<0.001

* Mean ± Standard deviation
† Statistical significance was evaluated by *t*-test
‡ Statistical significance was evaluated by chi-square test

Table 3. Mean bone age advancement in the TP 3 monthly depot and TP monthly depot

Time	Mean bone age advancement ± SD (years)		
	TP 3 monthly	TP monthly	*P*-value
Baseline	1.85±0.51*	1.84±0.51	0.963†
6 month	1.66±0.58	1.74±0.57	0.527
1 year	1.43±0.58	1.62±0.54	0.124

*Mean ± Standard deviation
† Statistical significance was evaluated by t-test

SUMMARY & CONCLISIONS

- TP 11.25mg 3-monthly depot is an effective treatment in the girls with CPP.
- The efficacy for reducing bone age advancement appear compatible to both monthly depot and 3-monthly depot.
- Further longitudinal study is required after the end of CPP treatment with both monthly depot and 3-monthly depot.