EFFECTS OF GnRH ANALOGUE TREATMENT ON INTERNAL GENITALES OF GIRLS WITH CENTRAL PUBERTY PRECOCIOUS

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BACKGROUND AND AIM

The GnRH analoques (GnRHa) have been used to treat many diverse reproductive system disorders, including precocious puberty. Little information is available on effects of GnRH analogue (GnRHa) treatment on internal genitales of girls with central precocious puberty (CPP). The present study aims to investigate the effects of GnRHa treatment on internal genitales of girls with central precocious puberty (CPP).

SUBJECTS AND METHOD

- The study included 40 girls who were diagnosed as CPP and treated with GnRH analogue (leuprolide acetate. Lucrin depot®. 3.75 mg of intramuscular or subcutaneous injections once every 28 days).
- Patients' age, bone age, puberty stage, LH, FSH and estradiol levels were noted retrospectively.
- Ovarian and uterin volumes were calculated in both initial and after treatment for at least 12 months, ultrasounds, uterin corpus/cervix differentiation, endometrium and follicules presence were evaluated.
- Uterine and ovarian volume were calculated using the ellipsoid formula [V (cm3)=longitudinal dimeter (cm) x transverse diameter (cm) x anteroposterior diameter (cm) x 0.5236].
- Morphological appearance of the ovaries the following simplified classificiation was used:
  - Type 1 or homogeneous: absence of visible cysts or follicles
  - Type 2 or paucicystic: <6 follicles with a diameter of <10 mm
  - Type 3 or multicystic: ≥6 follicles with a diameter of <10 mm
  - Type 4 or macrocystic: ≥ 1 follicles with a diameter of ≥10 mm
- Values before and after therapy were compared.

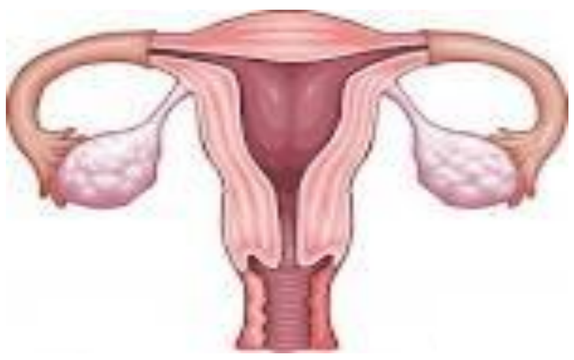
RESULTS

Forty girls with central puberty precocious were treated with GnRH analogue for 13.6 2.0 (12-18) months

Table I: Anthropometrics and puberty stages of the patients before and after treatment for at least 12 months (mean SD) (range)

	Before Treatment	After Treatment	p
Chronological age (years)	8.0±1.2 (4.3-9.9)	9.3±1.3 (5.3-11)	0.00
Bone age (years)	9.7±1.8 (4.5-12.0)	10.8±1.9 (4.5-13.5)	0.00
Height (cm)	130.5±9.0 (104.6-150.1)	138.0±8.3 (113.8-156.3)	0.00
Height SDS	0.7±0.9 (-0.0-3.9)	0.7±0.9 (-0.6-3.3)	0.68
Weight (kg)	31.0±6.0 (20.0-42.5)	37.3±7.5 (23.2-50)	0.00
Weight SDS	0.86±0.71 (-0.4-2.3)	0.9±0.7 (-0.6-2.4)	0.36
Mean Puberty stage	3 (2-5)	2 (1-4)	0.01

Initially 30% of the patients had endometrial thickening and 25% had uterin corpus-cervix differentiation. But during therapy these ranges determined to regrese to 12.5% and 7.5%, respectively (p=0.01).



Before GnRH analoque treatment there was 15.4% type 1 follicules and 71.8% type 2 follicules in ovarian. But after treatment for at least 12 months type 1 follicules existance was 37.5%, type 2 follicules existance was 55% (p=0.01).

Table II: Gonadotrophin, estradiol levels and ovarian and uterin volumes of patients before and after treatment for at least 12 months (mean SD) (range)

	Before Treatment	After Treatment	p
Basal LH (mIU/mL)	1.32±1.89 (0.07-10.38)	0.3±0.4 (0.07-1.8)	0.00
Basal FSH (mIU/mL)	4.1±1.9 (0.8-8.9)	2.9±0.4 (1.1-4.4)	0.00
E_2 (pg/mL)	27.7±15.8 (7.0-68.7)	14.1±5.5 (11.8-35.9)	0.00
Mean ovarian volume (cm3)	2.4±2.1 (0.3-12.6)	1.6±1.1 (0.4-4.8)	0.01
Uterin volume (cm3)	4.9±4.9 (0.2-24.1)	3.6±3.7 (0.9-19.4)	0.00

CONCLUSION

GnRH analogue treatment regresses puberty stage by repressing gonadothropin levels, and also decrease uterin and ovarian sizes, regresses uterin pubertal alterations and decreases number and sizes of ovarian follicules. Follow up of the ovarian and uterin sizes and evaluation of its compliance to age during GnRHa treatment is recommended.