Ovarian and Uterine Dimensions in the Evaluation of Precocious Puberty: Comparison with Leuprolide Stimulation Tests

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METHODS

Retrospective chart review of females who underwent Leuprolide stimulation tests for diagnosis of pubertal disorders in 2004-2008. Patients with hypothalamic, pituitary or gonadal disorders were excluded. Leuprolide: FSH and LH (ICMA) measured at 0, 60 and 120 min after 20mcg/kg dose of Leuprolide s.c., E2 (extracted RIA, sensitivity 5 pg/ml) measured at baseline and 24 hrs (Esoterix Lab,CA). We used baseline LH ≥ 0.5 IU/L and/or estradiol >1.0 ng/dl and peak LH 5.0 IU/L and estradiol 5.5 ng/dl as hormonal criteria for pubertal (PUB) or prepubertal (PRE) response. FSH levels overlapped widely between PRE and PUB. All sonograms were reviewed by single radiologist. Average (R+L/2) ovarian volume (AVG), uterine length (UL), uterine volume (UV), uterine configuration (UC) and endometrial stripe thickness (ES) were assessed.

RESULTS

Average ovarian volume and uterine volume were significantly larger in patients with pubertal response than in patients with prepubertal response (P=0.003 and P=0.03 respectively). Uterine lengths, however, were not significantly larger in patients with pubertal response than in patients with prepubertal response (P=0.48). Peak LH significantly correlated with average ovarian volume (r=0.40, P=0.009), uterine length (r=0.34, P=0.03) and uterine volume (r=0.50, P=0.0009).

CONCLUSION

Peak LH and estradiol values obtained with Leuprolide stimulation tests significantly correlate with ovarian and uterine volumes. Because of substantial variability, we recommend caution in the interpretation of data. Careful, long term clinical follow up is necessary to validate Leuprolide stimulation tests and sonographic findings.

REFERENCES
