Pubertal induction in girls with hypogonadism: preliminary data of efficacy in patients with/without initial overnight estrogen replacement

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INTRODUCTION

Pubertal induction in girls with hypogonadism through estrogen replacement therapy (ERT) aims at the development of secondary sexual characteristics, cognitive functions, uterine growth and maturation, bone mass accrual and linear growth, resembling natural puberty.

To date, the best induction regimen, capable of assuring both physiological gradual progression through Tanner stages and effective uterine development, is still to be established.

METHODS

Here we present our data regarding 19 prepubertal girls (age 16.9±2.8 years, range: 11.7-24.8 years, Tanner stage B1 at diagnosis) with hypogonadism:
- 16/19 hypogonadotropic hypogonadism;
- 3/19 premature ovarian insufficiency.

They were followed for at least 12 months (range 1.0-4.2 years) of estrogen replacement therapy (ERT) with transdermal 17βestradiol patches. Eleven out of 19 patients started with overnight ERT for six months (0.07-0.1 mcg/kg/day). In all patients, ERT was gradually increased every six months. Progesterone replacement was started in 10 girls at Tanner stage 5 or bleeding occurrence. Auxological, biochemical (17βestradiol), pelvic ultrasound and bone age assessment data were collected every 12 months from ERT start.

RESULTS

Mean tempo at Tanner stage B3 was 1.2±0.4 years, being negatively correlated with ERT dose/kg at start (p=0.01).

Mean tempo at Tanner stage B4 was 2.0±0.5 years, being higher in patients with initial overnight ERT (p=0.02).

Mean tempo at Tanner stage B5 or bleeding occurrence was 2.4±0.7 years, being positively correlated with uterine maturation (uterine length > 65 mm, p=0.02).

Mean adult height (AH) was 171.3±6.1 cm (1.24±0.94 SDS WHO), not statistically different from mid-parental height (MPH-AH -0.6±1.4 SDS WHO, p=0.2).

Uterine maturation was achieved by 71% patient at the end of induction, with final uterine length positively correlated with ERT dose/kg at progesterone introduction (p=0.02). No difference was found in uterine length between patients who underwent an initial overnight ERT and others.

CONCLUSIONS

(i) Initial overnight ERT assures a gradual pubertal progression, increasing mean tempo at Tanner stage B4, along with an adequate uterine maturation:

(ii) delaying Tanner stage 5 achievement and bleeding occurrence seems to be beneficial in terms of uterine maturation.

Further multicentric data are needed to confirm these evidences and the possible role of initial overnight ERT replacement.

REFERENCES