Short Communication

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Sustained Prolactin Release Associated with Precocious Ovarian Failure

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Key Words

Prolactin
Menopause
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Abstract

Five women after precocious menopause and 1 patient with primary ovarian failure showed a simultaneous elevation of plasma gonadotropin and prolactin. The hypersecretion of plasma prolactin was still present 6 months after ovarian failure. After 12–18 months of observation while FSH and LH concentration remained elevated, prolactin concentrations normalized in 5 women and decreased in 1.

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Introduction

After oophorectomy a significant rise of plasma prolactin (PRL) has been reported to occur in healthy women [1]. The upward trend of plasma PRL levels is similar to that induced by castration of FSH and LH concentrations. Weeks later, due to the reduced estrogen production, the PRL concentration decreases, becoming lower in postmenopausal women than in cycling ones. Nevertheless hCG administration elicits a PRL release of 2-3 days' duration in postmenopausal women.

The above findings suggest that both endogenous and exogenous gonadotrophins exert a short-lived paracrine stimulation on PRL secretion. Experimental findings indicate the α -subunit, the common component of FSH, LH and hCG, as the possible cause of this paracrine effect [2, 3]. Since the pituitary function changes with age it seemed of interest to look at changes in PRL secretion occurring in young women experiencing a premature ovarian failure.

Patients and Methods

We studied 5 women with amenorrhea and subjective symptoms of a recent (5-12 months) precocious menopause and a 20-year-old patient with primary ovarian failure (patient 5). Plasma PRL, FSH and LH levels were measured at the time of the first observation and then again after 12-18 months. None of the patients had estrogen replacement therapy or other drugs affecting gonadotropin or PRL secretion during this time. Hormone levels were determined with commercially available immunoassay kits (Biodata, Milan, Italy).

Results and Comments

Table 1 shows the concentrations of FSH, LH and PRL at baseline and after 12-18 months. At the time of the diagnostic workup all patients were hyperprolactinemic. In 5 of them the PRL levels were particularly elevated. As expected, FSH and LH concentrations were in the postmenopausal range. After 12-18 months, whereas FSH and LH plasma levels remained elevated, PRL normal-

Table 1. FSH, LH and PRL concentration evolution after precocious ovarian failure

ized in 5 women and decreased in the 6th. In these young patients the PRL release induced by the increased secretion of endogenous gonadotropins was more important and markedly more sustained than that induced in older women by oophorectomy. In fact while after oophorectomy PRL levels decrease in a few weeks [1] in these patients PRL concentrations were still elevated after 6-12 months after ovarian failure prior to a later decrease.

Since precocious ovarian failure and oophorectomy elicit comparable hypergonadotropinemia a possible explanation of their different time-related effects is an age-linked responsiveness of lactotrophs to the FSH and LH paracrine stimulation.

A different rate of free α -subunit synthesis or release in the two clinical situations could also explain the diversity of PRL changes.

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