

True Precocious Puberty*continued from p. 9*

mechanisms for maintaining homeostasis in an abnormal environment. These children need to cope with an age-appearance disparity that modifies the response of their social milieu. Adults expect children to perform tasks that are commensurate with height age. Consequently, these children may have an abnormal body image, lack self-confidence, or prefer to be by themselves. Their social withdrawal may well be related to the disparity of age and appearance and expected social behavior.

Sonis WA, Comite F, Blue J, et al: *J Peds* 1985;106:156.

Editor's comment—*In their summary, the authors emphasize that a majority of the girls in their series did not have behavioral problems, although a significant and large minority did have a dysphoric and stressful adjustment.*

Relevant to this report is one by Ehrhardt et al (J Am Acad Child Psychiatry 1984;23:1), entitled "Idiopathic Precocious Puberty in Girls: Psychiatric Follow-Up in Adolescence." This was a systematic, controlled study of psychopathology in 16 adolescent girls between 12 and 13 years of age, signifi-

cantly older than the patients studied by Sonis et al. The average height (160.7 cm) was below the average height (166.4 cm) of the controls, as would be expected in females with a history of sexual precocity. Patients and controls were similar regarding various aspects of self-image, except for marginal differences in morals and sexual attitudes. The patients had a somewhat less positive attitude toward sexuality, rating having a boyfriend as far less important than did the controls. There were also marginal differences in intellectual and school status, with decreased popularity and less anxiety being associated with the patients. Conduct problems, antisocial behavior, inadequacy or immaturity, and socialized delinquency were marginally increased in the patients.

It is important to note that both sets of authors stressed that an increased incidence of definitive psychiatric disorders was not found. Both sets also emphasized the probability that the psychosocial concomitants of TPP, especially the reactions of families and peers, contribute to the behavioral outcome.

Both of these articles prompt the editor to recommend that psychologists, psychiatrists, or others with special expertise in TPP closely monitor and counsel patients with sexual precocity.

saline, no GH level increases were seen during saline infusion; in the other two, only minor increments were observed. Long-term GHRF infusion in the six patients significantly increased GH secretion. Four to 13 pulses were detected during sleep while the GHRF was being infused. The highest peaks varied from 3.5 to 10.3 ng/ml and the integrated GH secretions ranged from 13.1 to 40.2 ng/ml/h with a mean of 22.5 ng/ml. The subsequent bolus injections of GHRF induced GH increases in all ten patients. The peak levels observed in the patients after saline varied between 1.0 and 5.6 ng/ml, while levels after GHRF infusion varied between 2.5 and 13.5 ng/ml. The somatomedin-C values determined before and after GHRF were similar.

Hizuka N, Takano K, Shizume K, et al: *Acta Endocrinol* 1985;110:17-23.

Editor's comment—*The authors have shown that GHRF infusion at a dose of 0.5 µg/kg/h produced pulsatile GH secretion in patients with GH deficiency, and that the integrated area under the GH curve was much greater than that during saline infusion. With regard to the frequency of peaks, the secretion patterns resembled those previously observed in healthy subjects. However, with respect to the quantitative output, the secretion was much less, corresponding to approximately 30% of that seen in normal adults.*

*Three aspects of these studies require comment. First, the hypophysis displays a pulsatile form of GH output, although the stimulating agent, GHRF, is administered continuously. This leads to the conclusion that the mode of pituitary GH secretion is pulsatile per se. Second, the continuous administration of small amounts of GHRF for ten hours does not blunt the response to subsequent injections of standard doses of GHRF, whereas the infusion of larger amounts blunts the subsequent response (Vance et al: *JCEM in press*), which is probably due to refractoriness of the pituitary somatotropins. Third, somatostatin may be the controlling factor in GH secretion, since GHRF was infused at a constant rate in these studies of Hizuka et al, yet GH was released in a pulsatile fashion.*

Plasma GH and Sm-C Response to Continuous GHRF Infusion in Patients With GH Deficiency

The secretion of human growth hormone (hGH) is controlled by two hypothalamic hormones: growth-hormone-releasing factor (GHRF) and somatostatin. The release of these hormones is in turn controlled by neurotransmitters in the central nervous system. The role played by the two hormones and the neurotransmitters in the pulsatile secretion of hGH is not yet clear. It is only known that most of the growth hormone (GH) pulses occur during the first hours of deep sleep. With the investigations presented here, Hizuka et al aim at a better understanding of the regulatory mechanisms involved and an improved

standard technique for the GHRF test.

In agreement with other investigators, the authors have shown previously that the majority of patients with idiopathic GH deficiency exhibit plasma GH increases following single or repetitive administration of GHRF-44. In the present protocol, the procedure is modified in favor of a combination of a ten-hour infusion of GHRF-44 at night with a subsequent bolus injection of the same hormone. Six patients with proven idiopathic GH deficiency underwent this protocol, receiving 0.5 µg/kg/h GHRF-44 during the infusion and, subsequently, 2 µg/kg as an intravenous bolus. Four other patients served as controls. They received a saline infusion over ten hours, followed by the same bolus injection.

In two of the patients receiving