

Growth of Males With Idiopathic Hypopituitarism Without Growth Hormone Treatment

Twenty-three males with idiopathic hypopituitarism who were not treated with growth hormone (GH) were evaluated with respect to their ultimate adult height. A majority of these individuals were born by breech delivery, which accounted for the hypopituitarism. A majority also had gonadotropin deficiency in addition to GH deficiency. Treatment with androgen in those with gonadotropin deficiency was started at a mean age of 17.4 years. At that time, all patients had heights -3 SDs below the mean. Bone maturation was greatly retarded, with bone ages (BAs) more than 3 years below the chronologic age (CAs). Patients whose puberty developed spontaneously had comparable BAs and heights when puberty began.

Patients with "induced" puberty reached a mean final height of 157.0 cm at a mean age of 26.1 years. The mean adult height was -3.9 SD for 4 patients with spontaneous puberty and -3.1 SD for the 19 with "induced" puberty. The pubertal period had a mean duration of 8.7 years in these 19 patients, during which

height increased by a mean of 20.4 cm. The mean difference between the predicted adult height at the onset of "induced" pubertal growth and the attained final height was -7.1 cm, ranging from -24 cm to +4 cm. Adult heights were positively correlated with heights at the onset of pubertal growth. The total mean height gained during "induced" puberty (20.4 cm) compares favorably with the height gained during spontaneous puberty by normal late maturing boys (approximately 18 cm).

The authors conclude that physicians should make every effort possible to increase the heights of GH deficient patients to within the normal range before puberty begins. If this is not done, significant short stature will persist in adulthood.

Van der Werff ten Bosch JJ, Bot A. *Clin Endocrinol* 1990; 32:707-717.

Editor's comment: *The authors document the ultimate heights of patients with hypopituitarism seen in their clinic. There are few tabulations of final adult heights of*

hypopituitary patients not treated with growth hormone, and this paper is a significant contribution in this respect. It is surprising that the mean growth attained following initiation of testosterone treatment was 20.4 cm. This was over a protracted treatment period, and probably results from relatively low doses of replacement therapy. It is to be noted that the vast majority of the patients did not reach their predicted heights.

The role of GH is important in the treatment of the GH deficient patient. Early diagnosis and adequate treatment are necessary for individuals with GH deficiency to reach their predicted heights or a height in accord with the target range based on midparental height. These are the emphatic points made by the authors and this editor.

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