

Efficacy and Safety of Growth Hormone Treatment in Children With Prior Craniopharyngioma: An Analysis of the Pharmacia and Upjohn International Growth Database (KIGS) From 1988 to 1996

This article presents data regarding the use of human growth hormone (hGH) in children with craniopharyngioma. Extensive data (collected from 1988 to 1996) were extracted from the Pharmacia and Upjohn International Growth Database. The database showed that 488 patients had a prior history of craniopharyngioma (280 boys, 208 girls). The modality of treatment of craniopharyngioma was known in 451 cases: 251 were treated with surgery alone; 144 had surgery plus irradiation; 12 received only irradiation; and 44 had received no surgery or radiation. hGH treatment was begun at a median time of 1.56 years (mean, 2.23 ± 1.88 years) after tumor diagnosis and was given in a mean dose of 0.49 ± 0.15 IU/kg/wk (0.15 mg) in 3 to 7 injections. Of the group, 40.4% were treated with hGH alone, but others received hydrocortisone and other replacement hormones.

Three hundred ninety-four children completed 1 year of hGH treatment; 152 who were prepubertal at the start of treatment completed 5 years of hGH treatment. The median height SDS increment was 0.9 after 5 years. The gain in height SDS was not influenced by tumor recurrence. Bone age increased 4.5 years in 5 years. Seventy-eight males and 53 females who completed hGH treatment to ultimate height were at a median height SDS of -0.7; 58.8% were above -1 SD in relation to target height. Mean height velocity during the final year of hGH treatment was 4.3 cm/y. Adverse effects included tumor recurrence, with 63 recurrences in 54 patients (11%) after a median of 3.7 years after the initial diagnosis; the longest interval between initial diagnosis and tumor recurrence was 10.3 years.

The authors point out that the response of children with treated craniopharyngioma to exogenous GH was similar to that seen in idiopathic growth hormone deficiency. Growth over 5 years was not influenced by the recurrence of tumor. They also state that they were unaware in every case of the factors involved in the decision to discontinue hGH, but that final height had not been achieved in many of these individuals at that time. Finally, they point out that the recurrence rate of 11% is greater than the rate of 6% to 7% reported in the National Cooperative Growth Study (NCGS) sponsored by Genentech Inc.

Price D, et al. *Hormone Res* 1998;49:91-97.

Editor's comment: *These are important data and help answer the question: "When does one begin GH therapy in children with treated craniopharyngioma?" The individuals reported in this study began their treatment at a mean of 2.3 years after tumor diagnosis. What remains unclear is why the decision was made to begin therapy at that time.*

The authors are correct in pointing out that their recurrence rate is greater than that from the NCGS in the United States for craniopharyngioma (6.4%). The conclusions from NCGS and the current report suggest that exogenous GH does not increase the risk for tumor recurrence.

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For a complete review of the diagnosis and management of craniopharyngioma, see GGH 1994;10(3):6-10.

Metabolic Effects of Long-Term Growth Hormone Treatment in Prepubertal Children With Chronic Renal Failure After Kidney Transplantation

Patients included in this report on metabolic data for the German Study Group for Growth Hormone Treatment in Chronic Renal Failure (CRF) had a height SDS of ≤ -2.0 and/or a height velocity < 25 th percentile, a glomerular filtration rate (GFR) of < 60 mL/min/1.73 m² in conservatively treated patients, and a GFR > 20 mL/min/1.73 m² in patients after renal transplantations (RT). Fifty-three children were prepubertal at the start of recombinant human growth hormone (rhGH) therapy and remained prepubertal throughout the observation period. Twenty-nine of the patients were on conservative treatment for CRF, 14 patients were on dialysis, and 10 other patients had functioning renal allografts. All were on immunosuppressant therapy with cyclosporine, azathioprine, and methylpred-nisolone.

Twelve healthy prepubertal children being evaluated for idiopathic short stature formed the control group. None had rhGH deficiency but had received rhGH therapy. The CRF patients received rhGH at a dose of 28 to 30 IU/m²/d (0.31 to 0.33 mg/kg/d). Control subjects received rhGH 24 IU/m²/d (0.26 mg/kg/d). Biochemical examinations included Hb_{A1c}, GFR, and a standard oral glucose tolerance test (OGTT), including insulin values.

Prior to administration of rhGH, Hb_{A1c} and glucose responses during the OGTT were significantly elevated in all patient groups compared with controls. Fasting and integrated glucose concentrations were significantly higher in dialyzed patients than in those treated conservatively or those with RT. As anticipated in RT patients, the fasting 2-hour postprandial glucose was