

National Cooperative Growth Study

The NCGS has proven to be a valuable method of monitoring the safety and efficacy of biosynthetic GH. The study has attracted wide physician participation due to the data collection software used and the extensive sharing of the analyses of that data with the providers ¹⁾.

The object of a study was to establish recurrence rates in patients with craniopharyngioma postoperatively treated with recombinant human growth hormone (rhGH) as a basis for determining the risk of rhGH therapy in the development of recurrent tumor.

The study included 739 pediatric patients with craniopharyngioma who were naïve to GH upon entering the Genentech National Cooperative Growth Study (NCGS) for treatment. Reoperation for tumor recurrence was documented as an adverse event. Cox proportional-hazards regression models were developed for time to recurrence, using age as the outcome and enrollment date as the predictor. Patients without recurrence were treated as censored. Multivariate logistic regression was used to examine the incidence of recurrence with adjustment for the amount of time at risk.

Fifty recurrences in these 739 surgically treated patients were recorded. The overall craniopharyngioma recurrence rate in the NCGS was 6.8%, with a median follow-up time of 4.3 years (range 0.7-6.4 years.). Age at the time of study enrollment was statistically significant according to both Cox ($p = 0.0032$) and logistic ($p < 0.001$) models, with patients under 9 years of age more likely to suffer recurrence (30 patients [11.8%], 0.025 recurrences/yr of observation, $p = 0.0097$) than those ages 9-13 years (17 patients [6.0%], 0.17 recurrences/yr of observation) and children older than 13 years (3 patients [1.5%], 0.005 recurrences/yr of observation).

Physiological doses of GH do not appear to increase the recurrence rate of craniopharyngioma after surgery in children, but long-term follow-up of GH-treated patients is required to establish a true natural history in the GH treatment era ²⁾.

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Wyatt D. Lessons from the national cooperative growth study. Eur J Endocrinol. 2004 Aug;151 Suppl 1:S55-9. PubMed PMID: 15339245.

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Smith TR, Cote DJ, Jane JA, Laws ER. Physiological growth hormone replacement and rate of recurrence of craniopharyngioma: the Genentech National Cooperative Growth Study. J Neurosurg Pediatr. 2016 Oct;18(4):408-412. PubMed PMID: 27286443.

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