

Letter to the Editor

I read the commentaries and the review of the paper by Zucchini et al on SCA final height after growth hormone treatment from *Arch Dis Child*, in the October 2001 issue of *GGH*. I would like to add the following points.

As the reviewer states, the treatment had begun late (approximately 10.8 years). What the reviewer does not state clearly is that the GH dose was too low. I calculated the dose to be about 0.22 mg/kg/week. The FDA approved GH for SGA at a recommended dose of 0.48 mg/kg/week. It is not surprising therefore that less than 50% of the recommended dose gives disappointing results. de Zegher et al presented near final height at the joint meeting in Montreal and the robust height SDS gains appeared to be sustained.

In essence then, the disappointing results of the Zucchini paper can be summarized as "too little, too late". That conclusion did not come across in the comments.

Paul Saenger, MD

First Editor's Comments: We appreciated the remarks of Dr. Saenger with regard to the abstract of the article by Zucchini, etc, *Arch Dis Child* 2001 84:340. Although, as Dr. Saenger pointed out, the dosage of GH used in the study was significantly less than that approved by the FDA for treating short SGA children, the children treated in this study were classified as growth hormone deficient based on stimulation tests. Thus one might argue that the magnitude of the difference between recommended and actual GH dose was not as different for these GH deficient children as it might have been had they been GH sufficient. Indeed, the presentation by de Zegher in Montreal last summer was very encouraging. Long-term studies, treating SGA children from an early age, at the recommended dose are necessary to answer the question of the overall benefit on adult height of GH treatment of SGA children.

William L. Clarke, MD

Second Editor's Comment: The Reviewer thanks Dr. Saenger for his helpful comments about the manuscript of Zucchini et al¹ concerning the effect of rhGH in short children born small for gestational age (SGA). The dose of rhGH utilized by these investigators (calculated to be 0.27 mg/kg/week) was indeed less than that employed by de Zegher et al^{2,3} (ranging between 0.23 and 0.7 mg/kg/week). In addition, these investigators began treatment with rhGH between 2-8 years of age, thus affording longer treatment periods. The adult heights of their patients have not been reported as yet, although through 6 years of therapy there was an increase in height of +2 SDS. However, treatment with high doses of rhGH resulted in insulin resistance that may not be completely reversible⁴ and in high levels of IGF-I during treatment.⁵

Even if rhGH is able to increase adult stature to a statistically significant extent, there are no data indicating that greater height is meaningful in terms of improved psychosocial well-being, educational attainment, or economic success. Given the potential hazards of insulin resistance, elevated levels of IGF-I (if only temporary), and lack of documented enhancement in the quality of life (QoL), treatment of SCA children with rhGH, particularly at the dose that has been approved by the FDA, seems hazardous to this reviewer and should only be employed in an investigative setting until its statural and QoL efficacies and safety have been well documented.

Allen W. Root, MD

References

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