Long-Term Treatment With Glucocorticoids/ACTH in Asthmatic Children

Forty children born between 1947 to 1974 with bronchial asthma severe enough to require long-term treatment with glucocorticoids or ACTH have been followed, 31 until adult height was reached. Twenty-three were given prednisolone for an average of 6.5 years beginning at an average age of 6 years, and 17 were given daily ACTH for 3 years, starting at an average of 5.5 years. The prednisolone-treated group had a height SDS of -1.0 at the beginning of treatment, -1.4 after 1 year, -1.8 after 2 years, and -2.4 after 3 years. In contrast the ACTH group, starting at -0.5, after 1 year were -0.1, after 2 years were +0.2, and after 3 years were +0.2. Thus, the height velocity for the ACTH-treated group was at all times above the mean, whereas for the prednisolone-treated group, it was at all times well below the mean. The diminished velocity on prednisolone was not significantly dose-related and was present in doses as small as 0.1 mg/kg per day.

The adult height of the ACTH-treated group was well within normal limits, as was their age at peak height velocity, whereas the adult height of the prednisolone-treated group was more than 2 SD below the mean in boys and approximately 1.5 SD below the mean in girls. Age at peak height velocity was severely retarded in the boys, by approximately 2 SD, whereas it was not so in the girls, whose age at menarche was within normal limits.

Oberger E, Engstrom I, Karlberg J. *Acta Paediatr Scand* 1990:79;77-83.

Editor's Comment: *This paper makes a very strong argument for treatment with ACTH rather than with prednisolone. The authors' conjecture is that the retardation in puberty in boys is due to long-term glucocorticoid effect on testosterone levels. Since other series report a normal adult height in patients despite glucocorticoid treat-ment, it is perhaps important to terminate glucocorticoids well before the expected time of puberty to allow some degree of catch-up.*

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