Growth rate was greater with fluticasone propionate than with beclomethasone dipropionate in children with chronic asthma


QUESTION: In children with chronic asthma, what are the effects of fluticasone propionate compared with those of beclomethasone dipropionate on growth rates?

Design
Randomised (allocation concealed*), blinded (unclear),* controlled trial with 12 months of follow up.

Setting
32 centres in 7 countries: The Netherlands, Hungary, Italy, Poland, Argentina, Chile, and South Africa.

Patients
343 children who were 4 to 11 years of age (mean age 8y, 72% boys); had a sexual maturity rating of Tanner stage 1; required treatment with fluticasone propionate, 100 to 200 µg/day, or beclomethasone dipropionate or budesonide, 200 to 500 µg/day, for ≥ 8 weeks before study entry at a constant dosage for ≥ 4 weeks before the run-in period; had a mean morning peak expiratory flow rate (PEFR) during the last 7 days of the run-in period of ≥ 85% of their maximum achievable response after using a metered dose inhaler containing albuterol sulphate, 400 µg; and had an asthma symptom score ≥ 1 or required albuterol ≥ 1 time daily on ≥ 4 days during the last 7 days of the run-in period. Exclusion criteria were intermittent asthma or disorders that could affect growth, receipt of oral or parenteral steroids, or admission to hospital with respiratory disease in the 4 weeks before the run-in period. 81% of patients were included in the analysis for growth rate.

Intervention
After the 2 week run-in period, during which patients continued to receive their existing inhaled corticosteroid treatment and albuterol sulphate on an as-needed basis, they were allocated to inhaled fluticasone propionate, 200 µg twice daily (n=170), or beclomethasone dipropionate, 200 µg twice daily (n=173), by dry powder inhaler for 52 weeks.

Main outcome measure
Change in height (growth rate) as measured by stadiometry.

Main results
Patients (n=277) with ≥ 2 data points (at randomisation and on or after 16 wks of treatment) who did not reach a Tanner stage of ≥ 2 during the study and who did not have other factors that would probably affect the measurement of growth (eg, poor compliance or use of systemic corticosteroids) were included in the analysis. Adjusted mean growth rate was greater in the fluticasone group than in the beclomethasone group (table).

Conclusion
The growth rate of children with chronic asthma was greater with fluticasone propionate than with beclomethasone dipropionate.

*See glossary.