

Translating Best Evidence into Best Care

EDITOR'S NOTE: Journals reviewed for this issue: *Archives of Disease in Childhood*, *Archives of Pediatrics and Adolescent Medicine*, *British Medical Journal*, *Journal of the American Medical Association*, *The Journal of Pediatrics*, *The Lancet*, *New England Journal of Medicine*, *Pediatric Infectious Diseases Journal*, and *Pediatrics*. Gurpreet K. Rana, BSc, MLIS, Taubman Medical Library, University of Michigan, contributed to the review and selection of this month's abstracts.

—John G. Frohna, MD, MPH

Nasal steroids helpful for short-term treatment of children with obstructive sleep apnea

Kheirandish-Gozal L, Gozal D. Intranasal budesonide treatment for children with mild obstructive sleep apnea syndrome. *Pediatrics* 2008;122:e149-55.

Question Among children with mild obstructive sleep apnea syndrome (OSAS), do intranasal corticosteroids improve sleep-related disturbances better than placebo?

Design Randomized crossover trial.

Setting University of Louisville.

Participants Sixty-two children with polysomnographically diagnosed mild OSAS.

Intervention Intranasal budesonide (32 μg per nostril at bedtime) or placebo for 6 weeks, followed by an additional 6-week treatment in the alternative treatment arm after allowing for a 2-week washout period.

Outcomes Polysomnographic assessment and radiographs for assessment of adenoid size.

Main Results There were significant improvements in both polysomnographic measures (sleep latency, slow-wave sleep, and rapid-eye-movement sleep), in the magnitude of respiratory disturbance (apnea/hypopnea index, nadir pulse oxygen saturation), and in adenoid size among the 48 children who completed the treatment phase, compared with 32 children who received placebo in their initial arm, with normalization of sleep measures in 54.1% of the treated children. Furthermore, discontinuation of treatment for 8 weeks for 25 children revealed a sustained duration of the initial treatment effect.

Conclusions A 6-week treatment with intranasal budesonide effectively reduced the severity of mild obstructive sleep apnea syndrome and the magnitude of the underlying adenoidal hypertrophy, and this effect persisted for at least 8

weeks after cessation of therapy. These findings justify the use of topical steroids as the initial therapeutic option in otherwise healthy children with mild obstructive sleep apnea.

Commentary This study adds to a small but growing body of evidence,^{1,2} which suggests that nasal corticosteroids may represent an effective short-term treatment for OSAS in children. The authors found that 6 weeks of intranasal budesonide treatment in children with mild OSAS resulted in normalization of the polysomnogram (PSG) in 54% of treated children and that improvements in PSG parameters and adenoidal size were maintained 8 weeks after completion of active treatment. Strengths of the study derive from its use of polysomnography and other objective assessment measures at 3 points within the double-blind, placebo-controlled, crossover protocol and from its use of rigorous selection criteria to ensure that the severity of OSAS for children in the cohort was truly uniform. Limitations of the study are modest. A substantial proportion of children in this study—23 of 62—were already receiving antihistamines or immunotherapy. Although these subjects were required to continue their existing therapy for the duration of the study protocol, it is unclear whether these subjects might represent children with allergic rhinitis or other conditions that might preferentially respond to use of nasal steroids. In spite of these encouraging results, further study will be required to determine the optimal role of nasal steroids in the treatment of pediatric OSAS and whether this treatment is safe and effective for long-term, as well as short-term, use.

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2. Mansfield LE, Diaz G, Posey CR, Flores-Neder J. Sleep disordered breathing and daytime quality of life in children with allergic rhinitis during treatment with intranasal budesonide. *Ann Allergy Asthma Immunol* 2004;92:240-4.