

EVIDENCE-BASED HEALTH CARE

INTRANASAL CORTICOSTEROIDS FOR NASAL AIRWAY OBSTRUCTION IN CHILDREN WITH ADENOIDAL HYPERTROPHY

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Aims

This feature on evidence-based health care (EBHC) aims to present useful practice-related information on topics relevant to readers of *Current Allergy & Clinical Immunology*. The treatment of topics is not comprehensive. The main aim is to illustrate selected aspects of the EBHC process viz. (i) identifying the best evidence and (ii) applying valid and relevant evidence in clinical practice. The box titled 'Some terms explained' enlarges on the technical terms mentioned in the text and marked with an asterisk (*).

Background

Adenoidal hypertrophy is generally considered a common condition of childhood. When obstructive sleep apnoea occurs, adenoidectomy is generally indicated. In less severe cases, non-surgical interventions may be considered; however, few medical alternatives are currently available. Intranasal steroids may be used to reduce nasal airway obstruction.

So what is the question?

What are the effects of intranasal corticosteroids on nasal airway obstruction in children with moderate to severe adenoidal hypertrophy?

The type of evidence to look for, and where to look for it

The best evidence will come from randomised controlled trials (RCTs). If more than one trial has been conducted, the most reliable evidence, if available, is a systematic review of all relevant RCTs. The Cochrane Collaboration (www.cochrane.org) conducts systematic reviews of the effects of healthcare interventions following rigorous methods and processes to reduce bias. You therefore first search *The Cochrane Library* (<http://www.thecochranelibrary.com/>) for a relevant systematic review.

What was found?

You find a recent systematic review examining the effects of intranasal corticosteroids on nasal obstruction in children.¹

What did the authors do?

To minimise publication bias* the authors conducted a comprehensive literature search (general approach for a comprehensive literature search is summarised in

Box 1) to identify both published and unpublished randomised controlled trials comparing intranasal corticosteroids with placebo or no intervention or other treatment in children aged 0-12 years with moderate to severe adenoidal hypertrophy.

Risk of bias of included studies was assessed independently by two authors.² Data were summarised in a narrative format.

Box 1. Approach to a comprehensive literature search to identify studies to include in a systematic review

Attempts must be made to identify all relevant studies regardless of language or publication status (published, unpublished, in press or in progress).²

The following sources are recommended:

1. Electronic searching of bibliographic databases using highly sensitive search strategies
2. Conference proceedings
3. Hand searching of relevant journals
4. Contacting individuals working in the field, organisations and pharmaceutical companies for unpublished and ongoing studies
5. Reference lists in other reviews, guidelines, included (and excluded) studies and other related articles should be searched for additional studies
6. Trials registers and trials results registers are important sources of ongoing trials.

Results

Five randomised trials ($N = 349$ children) were included. Two trials were randomised crossover trials.* Interventions included beclomethasone, mometasone and flunisolide. Four of the five trials found significant improvement in nasal obstructive symptoms and adenoid size in the group taking intranasal corticosteroids.

Implications for practice

Limited evidence suggests that intranasal corticosteroids may significantly improve nasal obstruction symptoms in children with moderate to severe adenoidal hypertrophy, and this improvement may be associated with a reduction of adenoid size. The long-term effect of intranasal corticosteroids in these patients remains to be defined.

REFERENCES

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2. Higgins JPT, Green S, eds. *Cochrane Handbook for Systematic Reviews of Interventions* Version 5.0.0 [updated February 2008]. The Cochrane Collaboration, 2008. Available from www.cochrane-handbook.org.

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*Some terms explained

Publication bias: Publication bias refers to the publication or non-publication of research findings, depending on the nature and direction of the results. Positive results are consistently more likely to be published than negative results. To minimise this in a systematic review authors need to conduct comprehensive literature searches to identify eligible studies.²

Crossover trials: Crossover trials allocate each participant to a sequence of interventions. A simple randomised crossover design is an 'AB/BA'

design in which participants are randomised initially to intervention A or intervention B, and then 'cross over' to intervention B or intervention A, respectively. Crossover designs offer a number of possible advantages over parallel group trials. Among these are that: (i) each participant acts as his or her own control, eliminating among-participant variation; (ii) consequently, fewer participants are required to obtain the same power; and (iii) every participant receives every intervention, which allows the determination of the best intervention or preference for an individual participant.²

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