

Parental education and guided self-management of asthma or wheeze in preschool children were not effective

Stevens CA, Wesseldine LJ, Couriel JM, et al. Parental education and guided self-management of asthma and wheezing in the pre-school child: a randomised controlled trial. *Thorax*. 2002 Jan;57:39-44.

QUESTION

What is the effectiveness of an educational intervention for parents of preschool children who have had a recent episode of acute asthma?

DESIGN

Randomized {allocation concealed*}†, blinded {clinicians, participants, data collectors, and outcome assessors}†,* controlled trial with 1-year follow-up.

SETTING

2 children's hospitals in England, United Kingdom (Leicester and Manchester).

PATIENTS

200 children between 18 months and 5 years (median age 32 mo, 67% boys) were recruited at the time of admission to a children's ward or at attendance at an accident and emergency department (AED) or children's assessment unit (CAU) with a primary diagnosis of acute severe asthma or wheezing. Follow-up was 94%.

INTERVENTION

Children were allocated to an intervention group ($n = 99$) or a control group ($n = 101$). The intervention included a general educational booklet about asthma in preschool children that discussed symptoms, triggers and how to avoid them, and asthma treatment; a written, guided self-management

plan with instructions on when to use rescue medication, what to do if asthma worsens, and signs of severe asthma and appropriate action to take; and two 20-minute structured individual educational sessions (1 mo apart) given by a specialist respiratory nurse. The control group received usual medical and nursing care.

MAIN OUTCOME MEASURES

Rates of general practitioner (GP) consultations, hospital readmissions, and attendances at an AED or CAU; children's perceived disability; caregiver's quality of life; and parental knowledge of asthma.

MAIN RESULTS

Analysis was by intention to treat. The intervention and control groups did not differ for the mean number of GP consultations per child per year (3.87 vs 4.13, mean difference -0.26 , 95% CI -1.34 to 0.81 , $P = 0.63$) or rates of hospital readmissions or AED or

CAU attendances (Table). Groups did not differ for children's perceived disability, caregiver's quality of life, parental knowledge of asthma, or confidence of parents or caregivers in caring for the child, and no appreciable trends existed in favor of treatment for any of these measures.

CONCLUSION

For parents of preschool children who have had a recent hospital visit for asthma or wheeze, an educational intervention with a written, guided self-management plan was not effective.

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*See Glossary.

†Information provided by author.

An educational intervention and guided self-management plan vs usual care for parents of preschool children after a recent hospital visit for asthma or wheeze‡

Outcomes at 1 y	Intervention	Usual care	RRI (95% CI)	NNH
Hospital readmissions	26%	19%	40% (–17 to 135)	Not significant
			RRR (CI)	NNT
AED or CAU attendances	17%	19%	9% (–64 to 49)	Not significant

‡AED = accident and emergency department; CAU = children's assessment unit. Other abbreviations defined in Glossary; RRI, RRR, NNH, NNT, and CI calculated from data in article.

COMMENTARY

Why did this well-designed study by Stevens and colleagues yield a negative result? Children with higher baseline morbidity were appropriately selected, the educational session reviewed key elements, and the power was acceptable. Perhaps the magnitude of difference in effects sought was unrealistically large, although smaller effects may not warrant the organizational effort required for the intervention.

Four other factors may have contributed to the negative result. First, the evidence supporting the key element of the intervention—administration of oral prednisolone with asthma worsening—is based on a single, dated randomized controlled trial (1). Thus, the recommended management strategy may be ineffective.

Second, the treating physician's endorsement of the recommendations made at the educational sessions is a key element for patient adherence (2). In this study, 10% of intervention-group patients were not prescribed short-acting inhaled β_2 -agonists; no mention is made about the percentage of patients actually prescribed oral prednisolone for the next cold.

Third, the authors provide little information about parental compliance with instructions on how to respond to asthma worsening.

Fourth, while visits for GP reevaluation are clearly part of resource use, combining them with repeated attendance to the ED and the rate of unscheduled GP consultations would reduce the power of the study to detect differences in the latter events.

The main lesson to be drawn from this well-designed trial is that one size does not fit all (i.e., what works for older children and adults does not necessarily apply to younger children). More trials are needed to address the special needs of preschool-aged children.

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