TREATMENT

A structured discharge package given by a nurse reduced hospital readmission in children with asthma

Wesseldine LJ, McCarthy P, Silverman M. *Structured discharge procedure for children admitted to hospital with acute asthma: a randomised controlled trial of nursing practice. Arch Dis Child* 1999 Feb;80:110-4.

Question

In children with acute asthma, can a structured discharge package given by a nurse reduce the rate of hospital readmission, visits to the emergency department (ED) after discharge, and consultations with general practitioners (GPs)?

Design

Randomised (concealed), unblinded, controlled trial with 6 months follow up.

Setting

A children's hospital in Leicester, UK.

Patients

160 children who were 2-16 years of age (median age 6 y, 61% boys) and were admitted to hospital with acute asthma. Follow up was 100% for readmission and emergency visits after discharge and 97% for consultation with GPs.

Intervention

Children were allocated to receive structured discharge packages (n=80) or usual discharge practices (n=80) at the time of discharge. A specialist nurse gave the structured discharge package, which consisted of a 20 minute interview in which information was given about the nature of asthma, how to recognise and avoid risk factors, and available drugs and devices. For each child, an individual, written, home management plan was devised. Short courses of oral steroids were included in the management plan if children had used steroids before and if parents consented to their use. Parents and children received a booklet to reinforce information given in the interview and to provide local and national contact information for obtaining additional advice.

Main outcome measures

Readmission to hospital. Secondary outcome measures included visits to the ED after discharge but without readmission and consultation with GPs about problematic asthma.

Main results

At 6 months, children in the structured discharge group had fewer readmissions ($p = 0.001$), fewer visits to the ED ($p < 0.001$), and fewer consultations with GPs for problematic asthma ($p < 0.001$) than did children in the control group (table).

Conclusion

In children with acute asthma, a 20 minute structured discharge package given by a nurse led to a decrease in hospital readmissions, visits to the ED, and consultations with GPs.

*Structured discharge package v no package for acute asthma in children**

Outcomes at 6 months	Structured discharge	No package	RRR (95% CI)	NNT (CI)
Hospital readmission	15%	38%	60% (29 to 78)	5 (3 to 12)
Hospital reattendance	8%	39%	81% (58 to 91)	4 (3 to 6)
GP consultation	40%	94%	57% (45 to 68)	2 (2 to 3)

*GP = general practitioner. Other abbreviations defined in glossary; RRR, NNT, and CI calculated from data in article.

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A modified version of this abstract appears in Evidence-Based Medicine.

Commentary

The results of Wesseldine *et al* support the usefulness of a nurse led structured discharge package for children who are admitted to hospital with acute asthma. The results are similar to a previous study,¹ but results from other randomised controlled trials of such packages showed little effect on morbidity.²

The study sample comprised 160 children from 2-16 years of age and was sufficiently large to yield meaningful results. Unfortunately, many eligible children were excluded because of researcher unavailability. The discharge package was described generally and it seems to have been individualised for each patient. Nurses delivering this intervention would probably require specialised knowledge of asthma.

The intervention was provided by 1 paediatric

respiratory nurse specialist who also collected all the outcome data. It is uncertain whether the study findings would have been the same if the intervention was delivered by various staff nurses who might be less expert and working with time constraints. The study could have been strengthened if the outcome data had been collected in a blinded fashion.

This study effectively tested a pragmatic approach to reduce readmissions in a paediatric population, which is an indicator of asthma management. We cannot draw conclusions about the impact of the intervention on asthma related morbidity, nor can we draw conclusions about the reason for a reduction in readmissions in the intervention group.

This nurse led structured discharge plan should only be incorporated into work

practices that have a paediatric respiratory nurse specialist available to provide the intervention. Before it can be provided by ward nurses who may be less expert and who may have more time constraints, the evaluation should be repeated under these same conditions. This would test the feasibility of individualising the discharge plan and determine whether time constraints at the point of discharge pose a barrier to the implementation of this intervention.

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- 1 Madge P, McColl J, Paton J. *Thorax* 1997;52:223-8.
- 2 Bernard-Bonnin AC, Stachenko S, Bonin D, *et al*. *J Allergy Clin Immunol* 1995;95:34-41.