Preventing readmissions to hospital for asthma

E A Mitchell

Childhood asthma is one of the most prevalent diseases in childhood, with major social and economic costs for the family and child. Furthermore, in developed countries asthma is responsible for many admissions to hospital, some of which represent readmissions, so that up to 50% of all the children admitted for asthma will be readmitted in the following 12 months. If these readmissions could be reduced then the potential savings, both for the health service and families, are large.

In this issue Madge and colleagues report the results of a randomised controlled study of a nurse-led home management training programme in children admitted to hospital with acute asthma. The results are stunning; readmissions were only 8% over the 14 months study period in the intervention group compared with 25% in the control group. Reattendance at the hospital emergency room was unchanged.

The first question is “Are the results of the study valid?” The Evidence-Based Medicine Working Group proposed a number of criteria by which to judge the validity of such studies. The primary criteria were fulfilled: the assignment of patients to treatments was randomised, all patients who entered the trial were properly accounted for, follow up for assessment of readmissions was complete, and patients were analysed in the groups to which they were randomised. The secondary criteria were: (a) were the patients, health workers, and study personnel “blind” to treatment? (b) were the groups similar at the start of the trial? (c) aside from the experimental intervention, were the groups treated equally? Although the health workers were not “blind” to treatment group, it is unlikely that this would have influenced readmissions as the decision to readmit was made independently of the research team. The mean age of the intervention and control groups was significantly different, but the difference was quite small and this would not have explained their findings.

The results are important and the study is valid. The next question is “What was the intervention?” The intervention package consisted of asthma nurse-led teaching/discussion sessions, a booklet providing practical advice about asthma, a written individualised asthma management plan, peak flow meter for children over five, parental administered oral steroids at home reported a larger number of attacks resulting in outpatient visits associated with their use. Asthma clinics are a traditional part of medical practice but have not been subject to clinical trials. One observational study found they had no effect on readmission rates after controlling for potential confounders.

The notable omission from the package of interventions in this study is an attempt to alter the child’s environment. Both tobacco smoking, particularly by the mother, and house dust mite exposure are associated with an increase in asthmatic symptoms. Smoking by parents of asthmatic children, although difficult to change, can be altered. Allergen avoidance studies have varied in their success.

“How generalisable are the results?” Certainly the asthmatic children in the study appear to be typical of those admitted to hospital, but one cannot help wondering how much the success of the intervention was dependent upon the skill of the asthma educator. Extending this study into the community with the aim of preventing first admissions is warranted.

These trials are difficult to perform and are difficult to attract research funding. Ms Madge and colleagues are to be congratulated on a study well done, and on designing an intervention package which has resulted in very low asthma readmission rates.

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