A nurse-led education programme reduced readmissions in children hospitalised with acute asthma


Objective
To determine whether a nurse-led education programme for parents of children who were hospitalised with asthma reduces readmissions.

Design
12-month randomised controlled trial.

Setting
4 wards of a large children’s teaching hospital in Scotland.

Patients
201 children who were ≥ 2 years of age (49% were 2 to 5 years of age, 62% boys) and were hospitalised with acute asthma.

Intervention
96 children were allocated to the nurse-led training programme and 105 to usual care. The study nurse who had specialist asthma training met briefly with parents within 24 hours of admission and then, on average, held 2 further teaching and discussion sessions with each family (total approximately 45 min). Parents received information on asthma, its triggers and treatment, and signs of impending asthma attacks; an individualised written treatment plan; a course of oral steroids with instructions about when to start; an appointment in a nurse-run asthma clinic; the opportunity to contact a nurse by telephone for advice; and if their child was older than 5 years, a peak flow meter with instructions on its use. The investigator did not document the community follow-up care in either group, nor did she ascertain the steroid use in either group after discharge.

Main outcome measures
The primary outcome was hospital readmissions, and the secondary outcome was number of emergency department visits.

Nurse-led education vs usual care*

<table>
<thead>
<tr>
<th>Outcome up to 14 months</th>
<th>Education EER</th>
<th>Usual care CER</th>
<th>RRR (95% CI)</th>
<th>ARR (EER - CER)</th>
<th>NNT (CI)</th>
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<tbody>
<tr>
<td>Readmission</td>
<td>8.3%</td>
<td>25%</td>
<td>67% (31 to 84)</td>
<td>16% (4 to 16)</td>
<td>7</td>
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</tbody>
</table>

*Abbreviations defined in Glossary; RRR, ARR, NNT, and CI calculated from data in article.

Commentary

We do not have information on the amount of telephone advice provided or on attendance rates at the follow-up clinic. Beyond the information available 3 to 4 weeks after discharge, the only outcomes studied were admission or emergency department attendance at the study hospital. We do not know about later contacts with primary care personnel or with other hospitals or about use of oral steroids in either the intervention or control groups. We do not know what proportion of the nurse’s time was used in the 96 children in the intervention group during the study year and therefore the level of resource investment in the programme. The study shows that a dedicated nurse providing asthma education to the parents of a relatively small number of children admitted with severe asthma can reduce the readmission rate in this setting. It does not allow us to judge whether the benefits are applicable to other settings in which standard follow-up and treatment may differ or to assess the full resource implications of the intervention.

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References