TREATMENT

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


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*

<table>
<thead>
<tr>
<th>Outcomes at 6 months</th>
<th>Structured discharge</th>
<th>No package</th>
<th>RRR (95% CI)</th>
<th>NNT (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital readmission</td>
<td>15%</td>
<td>38%</td>
<td>60% (29 to 78)</td>
<td>5 (5 to 12)</td>
</tr>
<tr>
<td>Hospital readmission</td>
<td>8%</td>
<td>39%</td>
<td>81% (58 to 91)</td>
<td>4 (5 to 6)</td>
</tr>
<tr>
<td>GP consultation</td>
<td>40%</td>
<td>94%</td>
<td>57% (43 to 68)</td>
<td>2 (2 to 12)</td>
</tr>
</tbody>
</table>

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

Source of funding: Glaxo Wellcome.

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, but results from other randomised controlled trials of such packages showed little effect on morbidity.

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 pediatric respiratory nurse specialist who also collected all the outcome data. It is unclear 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 pediatric 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.

Catherine Meagher, RM, RGN, RNT
Nurse Tutor
University College Hospital Galway
Practice Nurse, Clybaun Surgery
Galway, Eire