Review: self management education for adults with asthma improves health outcomes


Question
Is education in self management plus regular review by doctors or nurse practitioners effective in improving health outcomes for adults with asthma?

Data sources
Studies were identified using Medline, Embase/Excerpta Medica, and CINAHL, with the terms asthma or wheeze and education or self management. Bibliographies of studies were scanned and 10 respiratory journals and meeting abstracts from 3 specialty societies were handsearched.

Study selection
Randomised controlled trials (RCTs) were selected if the patients were predominantly adults with confirmed asthma, the intervention included education related to asthma and its management, and the outcomes included any of hospital admissions, emergency department visits, unscheduled doctor visits, days lost from work or school, forced expiratory volume at 1 second, peak expiratory flow, use of rescue beta agonists, course of oral corticosteroids, symptom scores, quality of life scores, or economic outcomes.

Main results
22 RCTs met the inclusion criteria (25 articles). 27 self management programmes were studied that included ≥ 1 of asthma education (n = 25 interventions), self monitoring (n = 23), regular review (n = 16), and a written plan (n = 12). 7 categories of settings and 9 outcomes were included. Self management led to reductions in the proportion of patients who were admitted to hospital, had unscheduled doctor visits, had days off work or school, and had nocturnal asthma (table). Optimal self management generally showed greater reductions and was also associated with improved lung function. A written action plan was associated with fewer hospital admissions. 5 studies compared optimal self management with doctor managed care and no differences were found in outcomes.

Conclusions
Patients with asthma who are given self care management education have a lower incidence of hospital admissions, unscheduled doctor visits, days off work, and nocturnal asthma. Reductions are greater when self management education includes a written plan.

Self management education v usual care for adults with asthma*

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Weighted event rates</th>
<th>RR (95% CI)</th>
<th>NNT (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital admission</td>
<td>6.9%</td>
<td>9.7%</td>
<td>38% (6 to 50)</td>
</tr>
<tr>
<td>Unscheduled doctor visits</td>
<td>28.9%</td>
<td>37.4%</td>
<td>26% (10 to 39)</td>
</tr>
<tr>
<td>Days off work</td>
<td>35.6%</td>
<td>51.8%</td>
<td>25% (10 to 37)</td>
</tr>
<tr>
<td>Nocturnal asthma</td>
<td>28.8%</td>
<td>37.7%</td>
<td>30% (17 to 41)</td>
</tr>
</tbody>
</table>

*Abbreviations defined in glossary; RRR, NNT, and CI calculated from data in article. Data on duration of follow up not available.

Data were extracted on study quality, patient and disease characteristics, educational interventions, health outcomes, intermediate outcomes (knowledge and skills), type of control, and duration of intervention. Interventions were divided into categories of optimal self management (a written action plan for self management of medications for exacerbations, self monitoring, and regular review); self monitoring and regular review without a written action plan; self monitoring only; and regular review only.

Commentary
Many health professionals believe that current education and self management programmes improve patients’ knowledge of asthma but few high quality research studies have been done. Thus, the effect of education on health outcomes remains disputed and the structure of optimal educational programmes have yet to be ascertained.

Gibson et al review the benefits of self management by adults with asthma in conjunction with regular follow up by a health professional. In a previous review they concluded that “information only” interventions did not show benefits. The current study comprehensively combines and assesses published randomised studies supporting the commonly held belief that a focused educational intervention improves health outcomes for patients with asthma. It offers guidance on the composition of health education programmes and concludes that self management programmes should involve written action plans and physiological self monitoring plus regular medical review.

Although data on age, sex, ethnicity, and healthcare provider preparation were given and socioeconomic level analysed in many of the studies, Gibson et al make no comment as to whether such factors should be addressed in optimal intervention protocols. Requirements for updates and their frequency, stage of illness when education is most beneficial, and the most appropriate clinical settings were not considered.

The review, of interest to respiratory nurse specialists in particular but also to other nurses involved in public education, emphasizes that patient involvement and empowerment through self management and education improves outcomes, thereby reducing the burden of illness. Patients in modern healthcare systems expect and are expected to share increasing responsibility for their own care; patient education programmes may be of value in ensuring that patients assume their maximal role in the healthcare process. Successful interventions will not only educate but also influence behaviour, improving compliance with treatment and outcome factors. Correctly designed patient education programmes may potentially benefit all members of the healthcare system by freeing up financial and human resources and enhancing quality of care.

Haleema Shakur, RN, BSc
Respiratory Research Nurse
Matthew Higham, MSc
Clinical Research Scientist
Imperial College of Science, Technology, and Medicine
London, UK