A pilot study of a community pharmacist intervention to promote the effective use of emollients in childhood eczema

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Abstract

A topic eczema is a common disease in children with a prevalence of around 20 per cent. It has a significant impact on the quality of life of children and their families. It affects all aspects of their lives, including sleep, school attendance and inclusion, play activities and emotional well-being.1,2 Recommended first-line treatment is with emollients and they are frequently prescribed. However, they are often not used in an effective way even though using them effectively may reduce the need for potent topical steroids.3 The Primary Care Dermatology Society and British Association of Dermatologists Guidelines for the management of atopic eczema state that patients and parents of children with eczema should be fully informed (in the consultation and with written information) about the condition and treatment options and that the correct application of emollients should be demonstrated. However, the main reason many patients and parents report dissatisfaction with consultations with dermatologists and GPs is that they are given little information about the condition and treatments and less than 5 per cent of parents recall receiving any demonstration of how to use or apply topical treatments.4 There is evidence that educational interventions, including those provided by dermatology specialist nurses, significantly increase the effective use of emollients with a consequent 89 per cent reduction in symptom severity.5,6,8,9 However, few children with eczema have access to specialist nurses. Community pharmacists are in an ideal position to be a source of support and advice for the majority of children who are diagnosed by their GP and never see a dermatologist or specialist nurse, for several reasons:

- They are the health professionals most likely to have contact with the child or parent in the early stages of the condition
- They see them every time they pick up their prescriptions or buy an over-the-counter preparation for eczema
- With the introduction of the new pharmacy contract, many have facilities for consultations and are offering additional services.

We undertook a pilot study to evaluate the feasibility and effectiveness of a simple intervention delivered by community pharmacists to promote the effective use of emollients by children with atopic eczema or their parents.

Methods

We undertook a pre-post intervention evaluation pilot study based in community pharmacies in Brighton, Coventry and London. This was a non-randomised, uncontrolled study to consider whether a simple pharmacist intervention, delivered within the scope of everyday practice, could promote the effective use of emollient creams and bath oils in children with eczema with a consequent improvement in eczema-related symptoms. The study was conducted over a four-month period from October 2005 to January 2006.

Participants

We recruited children aged between one and seven years with diagnosed atopic eczema and their parents. Eligible children were current or recent users of bath emollients that they received on prescription from their GPs. Subjects were recruited through advertisements placed in local schools and nurseries, and through participating pharmacies, and through the National Eczema Society. All subjects gave written informed consent. Participating pharmacists were recruited from Brighton, Coventry and London to capture variation in patient populations. Pharmacists were identified through previous experience of or participation in research studies and through primary care trusts and included independent pharmacies and small chain pharmacies. Eligible pharmacists had to have access to a private consulting room or area.

Results

50 subjects completed the intervention and follow-up. 20% had previously been shown how to apply emollient creams by a GP or nurse but only 10% were applying them correctly. There was a small, statistically significant reduction in itch following the intervention (mean reduction 1.43, SD 2.76, t = 3.61, P = 0.001), a small, statistically significant reduction in irritability (mean reduction 1.23, SD 2.84, t = 2.86, P = 0.006) but little reduction in sleep disturbance or skin appearance. 44% of subjects experienced a 50% or more reduction in itch and irritability. Following the intervention, there was an increase in the number of subjects who applied emollient creams correctly.

Conclusions

A community pharmacist intervention to promote the effective use of emollient creams in children with eczema is effective and is valued by parents. The intervention increases the correct use and application of emollients (adherence to recommended use) and significantly reduces symptoms.

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All participating pharmacists received identical training for the study. This training was designed from materials provided by an eczema specialist nurse and included:

- Background information about eczema (prevalence, characteristics, symptoms and the range of treatments available)
- Specific information about the role of emollients in managing eczema
- Information about the problems some parents have reported about emollients
- A physical demonstration of the recommended way of applying emollients, in terms of the amount of emollient to be used, how to apply it (using light downward strokes) and that a thin layer should be visible on the skin
- Further information about how to apply emollients, ie, how often they should be applied, and that they should be applied to the whole body not just the affected areas
- What information and advice to give parents about overcoming specific problems they might encounter with emollients
- A guide to some of the common misconceptions about emollients and how to address them
- Specific guidance on good research practice, ie, obtaining informed consent and completing research paperwork

Training was conducted face-to-face with pharmacists within two weeks of the start of the study and each pharmacist was given a training manual which contained all the information given during the session.

**Intervention** Eligible, consenting subjects were given an appointment to see a participating local pharmacist in the pharmacy. Pharmacists organised their own appointment slots to fit around times when the pharmacy was shut (for example, lunchtimes), during the quieter times in the pharmacy, or when there was adequate pharmacist cover within the pharmacy.

At the appointment, the pharmacist reviewed patient’s or parent’s management of eczema using a standardised proforma. This review included:

- Current treatment (bath and topical emollients, soap substitutes, topical steroids and any other product)
- Patterns of use of emollients (frequency, amount applied or added to the bath)
- A demonstration by the patient or parent of how he or she currently applied topical emollients

Following the standardised guidance provided by a dermatology specialist nurse, the pharmacists then gave advice about the correct use of bath and topical emollients with full explanations of the rationale underpinning correct use and practical tips for making effective use of emollients easier to achieve. They then demonstrated the correct method of application of topical emollients. Finally, they discussed concerns and questions raised by the patients or parents and gave them written information about eczema and treatment to take away.

The intervention took between 10 and 15 minutes to complete.

**Data collection** We assessed participating subjects twice: up to one week before and one month after their pharmacist appointment. The assessments consisted of a standardised questionnaire administered over the telephone by an independent trained researcher. All subjects were assessed by the same researcher both before and after the intervention.

The questionnaire is specifically designed to capture detailed information on the use and experience of pharmacological treatments and identify barriers to their effective use. It also includes a measure of the impact of the medical condition on quality of life and the severity of symptoms. It is a generic tool that has been validated and used in a number of chronic diseases. The questionnaire captured:

- Information about the child’s eczema (duration, severity, attributed cause)
- What information or advice they had previously received and from which health professionals
- Current management of eczema (prescription products, non-prescription products, alternative therapies)
- Impact of the child’s eczema on family quality of life
- Use of emollients (frequency, amount applied or added to the bath, method of application)
- Perceptions of efficacy of current emollient therapy
- Barriers to the effective use of topical emollients
- Attitudes to eczema and treatment
- Concerns about topical emollients

Current severity of the symptoms (itch, irri-
tability, sleep disturbance and skin appearance) were measured on a 0–10 scale where 0 represented no symptoms and 10 the worst.

The follow-up questionnaire was identical to the baseline questionnaire but with additional questions about contact with health professionals for advice or treatment for eczema within the follow-up period, and specific questions about the pharmacist intervention (what was covered and how helpful it had been).

**Statistical analysis** We used descriptive statistics to describe the current management of eczema, use of emollients and attitudes and concerns about eczema and emollient treatment. We used paired t-tests to evaluate change in the primary outcome (symptom severity) before and after the pharmacist intervention. We used SPSS 13.0 to analyse all data.

**Results** Fifty children and their parents completed the intervention and follow-up. Ten pharmacists delivered the interventions. The mean age of participating children was 3.8 years (SD 1.88, range 16 months to 7 years) and mean duration of eczema 3.0 years (SD 1.8, range 6 months to 6 years). Forty-two of the children (84 per cent) were Caucasian.

**Symptom severity** Seven children (14 per cent) were rated by their parents as having severe eczema, 12 (24 per cent) moderate eczema and 31 (62 per cent) mild eczema. The mean scores for symptom severity are given in Table 1. There was a small, statistically significant reduction in itch and irritability following the pharmacist intervention (Table 1). There was also a reduction in redness and scaliness of the skin following the intervention but this was not statistically significant. There was little reduction in sleep disturbance.

**Current management of eczema** All children were currently using or had recently used an emollient bath oil prescribed by their doctor. In addition, many children were using either the soap substitute or an emollient cream with or without a topical steroid. Some children were using several similar products, for example, more than one emollient cream. Twenty-six children (52 per cent) were using a topical steroid. In addition, five children (10 per cent) were having wet wraps to control their eczema.

Nineteen children (38 per cent) were on special diets to help manage their eczema but there was little use of alternative therapies: six (12 per cent) were taking a homeopathic remedy, two (4 per cent) were using Chinese medicine and none was having acupuncture.

**Effective use of emollient creams** Before the pharmacist intervention, few parents were using emollient creams as recommended to maximise efficacy. For example:

- Only 17 (34 per cent) were applying creams more than once a day; 26 (52 per cent) were applying them less frequently than once a day (Table 2)
- Two-fifths (20, 40 per cent) were applying the creams so as to leave a thin layer on the surface of the skin as recommended (Table 3)
- Around half (27, 54 per cent) were applying the creams just to the patches of eczema instead of the whole body

There was evidence that some parents (12, 24 per cent) were either confusing emollient creams with steroids or following the same advice as for topical steroids and applying them sparingly.

Pharmacists observing parents’ application of cream to their children reported that only around half (27, 54 per cent) of parents were using the correct amount of cream, 20 (40 per cent) were using too much, and only six (12
Children (49, 98 per cent) had seen their GP for advice and treatment for their eczema. Fifteen (30 per cent) had seen a dermatologist for advice and treatment for their eczema. One issue in understanding children's skin disease outcome. Emollient creams and bath preparation products parents are using to manage eczema because of an allergy to something such as cow's milk and 10 (20 per cent) thought it had been caused by pollution. Itch (4.64 (2.50)) was the most common skin symptom, followed by irritability (3.86 (2.76)), sleep disturbance (2.09 (2.80)) and skin appearance (4.27 (2.40)).

Beliefs and concerns about eczema

Several potential barriers to the effective use of emollient creams were identified. Twelve parents (24 per cent) reported that their children did not like having the cream applied, 19 (38 per cent) found time-consuming to use and 28 (56 per cent) said the creams made a mess of clothes, furniture and bed sheets. Barriers to use of emollient creams

In this study we found that many parents were applying emollient creams ineffectively and that few (10, 20 per cent) had ever been shown how to apply them correctly. This highlights a gap in knowledge and understanding that may be having an impact on disease outcome. Emollient creams and bath preparations are recommended as a first-line, ongoing treatment for atopic eczema and it has been suggested that effective use of emollients may be steroid-sparing. Using them effectively therefore, may be important in reducing the amount of steroid treatment children are exposed to. Previous studies have demonstrated that dermatology specialist nurses are extremely effective in educating people with eczema about their condition and in particular, how to use treatments such as emollients, but few children have access to specialist nurses. In this study, only 16 per cent had seen a dermatology specialist nurse. Many children or parents (60 per cent) had received a verbal explanation of eczema and the prescribed or recommended treatment from the health professional(s) they had seen, 16 (32 per cent) had received written information and advice and 10 (20 per cent) had been shown how to apply the topical emollient prescribed.

Patient/parent feedback on the pharmacist intervention

Most parents (39, 78 per cent) rated the pharmacist intervention as extremely helpful or quite helpful. Those that rated it as only a little helpful or not helpful said that the intervention itself had been useful but that they had not learnt anything new because they had no previous experience of managing eczema through having several affected children.

Table 1: Mean values for symptom severity before and after the pharmacist intervention

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Pre-intervention severity, mean (SD)</th>
<th>Post-intervention severity, mean (SD)</th>
<th>Mean difference (95% CI)</th>
<th>P=</th>
</tr>
</thead>
<tbody>
<tr>
<td>Itch</td>
<td>4.64 (2.50)</td>
<td>3.20 (2.27)</td>
<td>1.44 (0.65 to 2.30)</td>
<td>0.001</td>
</tr>
<tr>
<td>Irritability</td>
<td>3.86 (2.76)</td>
<td>2.50 (2.26)</td>
<td>1.33 (0.63 to 2.03)</td>
<td>0.006</td>
</tr>
<tr>
<td>Sleep disturbance</td>
<td>2.09 (2.80)</td>
<td>1.75 (2.37)</td>
<td>0.34 (-0.53 to 1.22)</td>
<td>0.44</td>
</tr>
<tr>
<td>Skin appearance</td>
<td>4.27 (2.40)</td>
<td>3.52 (2.03)</td>
<td>0.75 (-0.11 to 1.62)</td>
<td>0.09</td>
</tr>
</tbody>
</table>

Discussion

We have demonstrated that a simple intervention to help parents and children to manage eczema more effectively through the correct use of emollient creams can be delivered by community pharmacists within their pharmacies and that this intervention is valued by parents. We have also demonstrated a small, statistically significant reduction in eczema symptoms following the intervention, although because this is a non-randomised, uncontrolled pilot study in a small number of subjects and pharmacists, this result should be interpreted with caution.

In this study we found that many parents were applying emollient creams ineffectively and that few (10, 20 per cent) had ever been shown how to apply them correctly. This highlights a gap in knowledge and understanding that may be having an impact on disease outcome. Emollient creams and bath preparations are recommended as a first-line, ongoing treatment for atopic eczema and it has been suggested that effective use of emollients may be steroid-sparing. Using them effectively therefore, may be important in reducing the amount of steroid treatment children are exposed to. Previous studies have demonstrated that dermatology specialist nurses are extremely effective in educating people with eczema about their condition and in particular, how to use treatments such as emollients, but few children have access to specialist nurses. In this study, only 16 per cent had seen a dermatology specialist nurse. Many children or parents (60 per cent) had received a verbal explanation of eczema and the prescribed or recommended treatment from the health professional(s) they had seen, 16 (32 per cent) had received written information and advice and 10 (20 per cent) had been shown how to apply the topical emollient prescribed.

Table 2: Frequency of cream use before and after the pharmacist intervention

<table>
<thead>
<tr>
<th>Frequency</th>
<th>No of parents who applied cream:</th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>4–6 times daily</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>3–4 times daily</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Once daily</td>
<td>14</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Few days a week</td>
<td>6</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>As needed</td>
<td>13</td>
<td>13</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Amount of cream applied before and after the pharmacist intervention

<table>
<thead>
<tr>
<th>Application</th>
<th>No of parents who applied cream:</th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sprinkly</td>
<td>12</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Completely absorbed</td>
<td>18</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Thin layer</td>
<td>20</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Thick layer</td>
<td>0</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Table 4: Number of parents/children using creams in non-recommended ways before the intervention (n=50)

<table>
<thead>
<tr>
<th>Use</th>
<th>No (%) of parents/children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applying less than once a day</td>
<td>26 (52)</td>
</tr>
<tr>
<td>Applying only to patches of eczema</td>
<td>27 (54)</td>
</tr>
<tr>
<td>Confusing emollients with steroids</td>
<td>12 (24)</td>
</tr>
<tr>
<td>Applying too much</td>
<td>20 (40)</td>
</tr>
<tr>
<td>Rubbing cream in (exacerbates itch)</td>
<td>44 (88)</td>
</tr>
</tbody>
</table>
experience of delivering interventions or had been providing additional professional services for some time. This may mean that they were more experienced than other pharmacists in delivering interventions. The subjects were self-selected and may have been more likely to be responsive to an intervention of this type than other parents of children with eczema. Both these situations would have promoted a positive result in this study. However, if such an intervention were to be introduced into routine clinical practice, it is likely that the pharmacists most likely to adopt it would be similar to our group and that subjects would to some extent be self-selecting in the same way as they were in this pilot study.

To show conclusively that an intervention delivered by community pharmacists results in symptom improvement would require an adequately powered randomised controlled trial in a larger number of subjects and with a greater number of pharmacists delivering the intervention to take account of the variability in pharmacist practice. What we have shown is that community pharmacists can deliver interventions to provide information and advice to parents of children with eczema, that they can do so within their usual practice and that such an intervention is highly valued by parents. Further work is needed to demonstrate the effectiveness of this intervention in changing behaviour, promoting adherence and concordance over a longer period, reducing symptoms, improving control and minimising the need for topical steroids. We also need to examine how interventions in eczema can be best incorporated into the community pharmacy contract within additional or enhanced services.

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