

Executive summary

Systematic review of treatments for atopic eczema

C Hoare¹

A Li Wan Po²

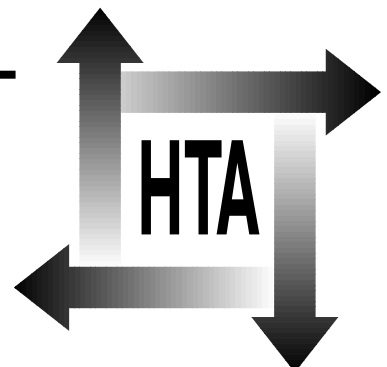
H Williams^{1*}

¹ Centre of Evidence-Based Dermatology, University of Nottingham,
Queens Medical Centre NHS Trust, Nottingham, UK

² Centre of Evidence-Based Pharmacotherapy, Aston University,
Birmingham, UK

* Corresponding author

**Health Technology Assessment
NHS R&D HTA Programme**





Executive summary

Background

Atopic eczema is the commonest inflammatory skin disease of childhood, affecting 15–20% of children in the UK at any one time. Adults make up about one-third of all community cases. Moderate-to-severe atopic eczema can have a profound effect on the quality of life for both sufferers and their families. In addition to the effects of intractable itching, skin damage, soreness, sleep loss and the social stigma of a visible skin disease, other factors such as frequent visits to doctors, special clothing and the need to constantly apply messy topical applications all add to the burden of disease. The cause of atopic eczema is unknown, though a genetic predisposition and a combination of allergic and non-allergic factors appear to be important in determining disease expression. Treatment of atopic eczema in the UK is characterised by a profusion of treatments aimed at disease control. The evidential basis of these treatments is often unclear. Most people with atopic eczema are managed in primary care where the least research has been done.

Objectives

The objectives of this scoping review are two-fold.

- To produce an up-to-date coverage ‘map’ of randomised controlled trials (RCTs) of treatments of atopic eczema.
- To assist in making treatment recommendations by summarising the available RCT evidence using qualitative and quantitative methods.

Methods

Data sources

Data sources included electronic searching of MEDLINE, EMBASE, the Cochrane Controlled Clinical Trials Register, the Cochrane Skin Group specialised register of trials, handsearching of atopic eczema conference proceedings, follow-up of references in retrieved articles, contact with leading researchers and requests to relevant pharmaceutical companies.

Inclusion/exclusion criteria

Only RCTs of therapeutic agents used in the prevention and treatment of people with atopic eczema of any age were considered for inclusion. Only studies where a physician diagnosed atopic eczema or atopic dermatitis were included.

Data extraction

Data extraction was conducted by two observers onto abstraction forms, with discrepancies resolved by discussion.

Quality assessment

The quality assessment of retrieved RCTs included an assessment of:

- a clear description of method and concealment of allocation of randomisation
- the degree to which assessors and participants were blinded to the study interventions, and
- whether all those originally randomised were included in the final main analysis.

Data synthesis

Where possible, quantitative pooling of similar RCTs was conducted using the Cochrane Collaboration’s methods. Where statistical heterogeneity was found, sources of heterogeneity in terms of study participants, formulation or posology of intervention, and use of co-treatments were explored. Where pooling was not deemed to be appropriate, detailed descriptions of the study characteristics and main reported results were presented along with comments on study quality.

Results

A total of 1165 possible RCTs were retrieved in hard copy form for further scrutiny. Of these, 893 were excluded from further analysis because of lack of appropriate data. The 272 remaining RCTs of atopic eczema covered at least 47 different interventions, which could be broadly categorised into ten main groups.

Quality of reporting was generally poor, and limited statistical pooling was possible only for oral cyclosporin, and only then after considerable data transformation.

There was reasonable RCT evidence to support the use of oral cyclosporin, topical corticosteroids, psychological approaches and ultra-violet light therapy.

There was insufficient evidence to make recommendations on maternal allergen avoidance for disease prevention, oral antihistamines, Chinese herbs, dietary restriction in established atopic eczema, homeopathy, house dust mite reduction, massage therapy, hypnotherapy, evening primrose oil, emollients, topical coal tar and topical doxepin.

There was no RCT evidence to support any clear clinical benefit on the use of avoidance of enzyme washing powders, cotton clothing as opposed to soft-weave synthetics, biofeedback, twice-daily as opposed to once-daily topical corticosteroids, topical antibiotic/steroid combinations versus topical steroids alone and antiseptic bath additives.

There was complete absence of RCT evidence on short bursts of potent versus longer-term weaker topical steroids, dilution of topical corticosteroids, oral prednisolone and azathioprine, salt baths, impregnated bandages, wet-wrap bandages, water softening devices, allergy testing, and different approaches to organisation of care.

Conclusions

Coverage

The evidence base for the prevention and treatment of atopic eczema has many limitations. It is characterised by a profusion of short-term trials of 'me too' products, a lack of common outcome measures which measure things that are important to patients, poor standards of clinical trial reporting, and a lack of data on questions that physicians and people with atopic eczema deem to be important. Little research has evaluated commonly used treatments compared with each other or in combination. This mismatch is probably due to a combination of the questions not being asked

coupled with a lack of independent investment in primary atopic eczema research.

Recommendations for research

Urgent **primary research** priorities include RCTs of wet-wrap treatments, the clinical benefit of allergy testing, the use of water softeners, the role of specialist nurses, comparisons of tacrolimus and ascomycin against topical corticosteroids, studies of disease prevention, and the use of emollients in preventing disease relapse. Such RCTs should ideally be pragmatic and simple in design, with a few outcome measures that doctors and patients find easy to understand. They should ideally be of 4 months' or more duration in order to capture the chronicity of disease as well as short-term effects. If such trials are intended to inform primary care, where patients may have milder disease, then they should be conducted in a primary care setting.

This review suggests that there is some scope for further **secondary research** by systematically reviewing some of the major treatment groups such as antihistamines and essential fatty acids in more detail, and some of these are already underway within the Cochrane Skin Group.

Future **methodological research** is needed to increase the clinical relevance and reliability of outcome measures for atopic eczema. The RCT database contained within this report also provides a good opportunity to conduct some general research into the relationship between study quality and treatment benefit. There is much scope for improving the standard of clinical trial reporting in atopic eczema by dermatology journals adopting rigorous checks on clinical trial reporting and by registering ongoing trials with the Cochrane Skin Group.

Publication

Hoare C, Li Wan Po A, Williams H. Systematic review of treatments of atopic eczema. *Health Technol Assess* 2000;4(37).

NHS R&D HTA Programme

The NHS R&D Health Technology Assessment (HTA) Programme was set up in 1993 to ensure that high-quality research information on the costs, effectiveness and broader impact of health technologies is produced in the most efficient way for those who use, manage and provide care in the NHS.

Initially, six HTA panels (pharmaceuticals, acute sector, primary and community care, diagnostics and imaging, population screening, methodology) helped to set the research priorities for the HTA Programme. However, during the past few years there have been a number of changes in and around NHS R&D, such as the establishment of the National Institute for Clinical Excellence (NICE) and the creation of three new research programmes: Service Delivery and Organisation (SDO); New and Emerging Applications of Technology (NEAT); and the Methodology Programme.

This has meant that the HTA panels can now focus more explicitly on health technologies ('health technologies' are broadly defined to include all interventions used to promote health, prevent and treat disease, and improve rehabilitation and long-term care) rather than settings of care. Therefore the panel structure has been redefined and replaced by three new panels: Pharmaceuticals; Therapeutic Procedures (including devices and operations); and Diagnostic Technologies and Screening.

The HTA Programme will continue to commission both primary and secondary research. The HTA Commissioning Board, supported by the National Coordinating Centre for Health Technology Assessment (NCCHTA), will consider and advise the Programme Director on the best research projects to pursue in order to address the research priorities identified by the three HTA panels.

The research reported in this monograph was funded as project number 96/17/01.

The views expressed in this publication are those of the authors and not necessarily those of the HTA Programme or the Department of Health. The editors wish to emphasise that funding and publication of this research by the NHS should not be taken as implicit support for any recommendations made by the authors.

Criteria for inclusion in the HTA monograph series

Reports are published in the HTA monograph series if (1) they have resulted from work commissioned for the HTA Programme, and (2) they are of a sufficiently high scientific quality as assessed by the referees and editors.

Reviews in *Health Technology Assessment* are termed 'systematic' when the account of the search, appraisal and synthesis methods (to minimise biases and random errors) would, in theory, permit the replication of the review by others.

HTA Programme Director: Professor Kent Woods
Series Editors: Professor Andrew Stevens, Dr Ken Stein and Professor John Gabbay
Monograph Editorial Manager: Melanie Corris

Copies of this report can be obtained from:

The National Coordinating Centre for Health Technology Assessment,
Mailpoint 728, Boldrewood,
University of Southampton,
Southampton, SO16 7PX, UK.
Fax: +44 (0) 23 8059 5639 Email: hta@soton.ac.uk
<http://www.ncchta.org>

ISSN 1366-5278