

CPD

What's new in atopic eczema? An analysis of systematic reviews published in 2016. Part 3: nomenclature and outcome assessment

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doi:10.1111/ced.13886

Summary

This review forms part of a series of annual updates that summarize the evidence base for atopic eczema (AE). It presents the key findings from 11 systematic reviews published in 2016 that focus on AE outcome assessment, disease impact and nomenclature. Systematic reviews on the treatment and prevention of AE are summarized in Part 1 of this update, and systematic reviews on the epidemiology of and risk factors for AE are summarized in Part 2. Six reviews summarized what outcome measurement instruments have been used in published AE trials, or summarized validation studies for the available instruments. These reviews were used to inform consensus decisions by the Harmonising Outcome Measures for Eczema initiative. Although validated instruments exist for clinical signs and patient-reported symptoms, there are currently no validated instruments for capturing quality of life or long-term control. Four reviews examined the impact of AE on children and their families, but few studies were included. One birth cohort study found no association between AE and educational attainment at 11 years. AE has a moderate impact on health-related quality of life and a substantial impact on family life. AE is a major risk factor for occupational hand dermatitis, and it is advised that young atopic individuals are informed about high-risk occupations. Further efforts are required to standardize the nomenclature for AE, which is also commonly known as 'atopic dermatitis' or 'eczema', and preferred terms vary around the world.

Background

Atopic eczema (AE) is a common inflammatory skin disease.¹ The aim of this evidence update is to highlight the key findings from systematic reviews (SRs) published or indexed in bibliographic databases during

2016, examining AE nomenclature, disease impact and outcome assessments. For an update of SRs on the treatment and prevention of AE and for SRs on AE epidemiology, aetiology and risk factors, see Parts 1 and 2 of this update, respectively. Similar evidence updates on AE have been published previously, along with details of the search methods used.^{2–4}

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Conflict of interest: none declared.

This article presents independent research funded by the National Institute for Health Research Programme Grants for Applied Research (project number RP-PG-0216 20007). The views and opinions expressed in this article are those of the authors and do not necessarily reflect those of the NIHR, the National Health Service or the Department of Health.

Accepted for publication 18 September 2018

Disease assessment and outcomes

During 2016, six SRs were published relating to AE outcomes.

Measuring eczema severity

Hill *et al.*⁵ found 62 different disease severity scales used in 135 RCTs published between July 2010 and

July 2015. The most commonly used scales were SCORing Atopic Dermatitis (SCORAD), visual analogue scale for pruritus, Investigator's Global Assessment and Eczema Area and Severity Index (EASI), but other, largely unvalidated, scales were used in many studies.

Measuring symptoms

Evaluating 295 RCTs published between January 2000 and April 2014, Gerbens *et al.*⁶ found that 78% reported AE symptoms and approximately half of the 295 trials reported symptoms as part of their primary outcome measure. The symptoms most commonly captured were itch (98%) and sleep loss (61%), using a visual analogue scale. As with clinician-reported signs, many studies (63%) evaluated symptoms using a composite instrument, which made it difficult to extract data on symptoms only.

Another SR⁷ evaluated the measurement properties of AE symptom scales. This review identified five outcome measurement instruments that were the most well validated: Paediatric Itch Severity Scale, Patient-Oriented Eczema Measure, Patient-Oriented SCORing Atopic Dermatitis (PO-SCORAD), Self-Administered Eczema Area and Severity Index (SA-EASI) and adapted EASI.

Measuring long-term control

Barbarot *et al.*⁸ highlighted the difficulties in assessing long-term control of AE and the wide variety of methods used in published trials. In 101 RCTs with a duration of ≥ 3 months, long-term control was captured by 91% through repeated measurements of clinician-reported or patient-reported outcomes, by 29% on the basis of AE medication use and about a quarter of studies by AE flares (using different definitions of flare and remission). Worryingly, 40% of the RCTs were judged to have conducted analysis of repeated measures data using inappropriate statistical techniques.

Measuring quality of life

Heinl *et al.*⁹ evaluated health-related quality of life (HRQoL) outcome measurement instruments used in AE trials during the period 2000–2014. The review included 303 RCTs. Only 20.8% assessed HRQoL. The most frequently used outcome measurement instruments were the Dermatology Life Quality Index (DLQI) in adults, the Children's Dermatology Life Quality Index (CDLQI) in children, the Infants' Dermatitis QOL index (IDQOL) in infants and the Dermatitis Family

Impact in carers of children. A second SR assessing 135 RCTs published during the period 2010–2015 showed similar findings.⁵ The majority of scales had not been validated in people with AE.

A review evaluating the measurement properties of HRQoL instruments in infants, children and adolescents with AE¹⁰ found that no instruments were sufficiently well validated to recommend their use in AE clinical trials.

Core outcome sets

Core outcome sets are increasingly recommended as a way of improving the quality of clinical studies and to facilitate clinical decision-making by ensuring that results from different studies can be combined in meta-analyses.¹¹ The Harmonising Outcome Measures for Eczema (HOME) initiative¹² aims to develop a core outcome set for use in AE trials: the four core domains chosen by HOME are clinician-reported signs, patient-reported symptoms, long-term control and HRQoL.¹³ The HOME initiative has agreed by consensus that EASI is the preferred core outcome measurement instrument to measure clinical signs¹⁴ and Patient-Oriented Eczema Measure is the preferred core outcome instrument to measure patient-reported symptoms¹⁵ in clinical trials of AE treatments. No agreement has yet been reached as to the preferred outcome measurement instruments to capture QoL and long-term control.

Disease impact

We found four SRs that evaluated the impact of AE on children and their parents.

Impact on health-related quality of life

Evaluating published CDLQI scores for a range of childhood skin conditions in 4082 people with AE, Olsen *et al.*¹⁶ found a mean 'moderate' effect of AE on HRQoL. However, the studies were mostly short-term, and direct comparisons using CDLQI across different skin conditions may be misleading and fail to assess long-term disease burden, as disease persistence is not taken into consideration.

A qualitative review by Ablett *et al.*¹⁷ assessed the impact of skin diseases on children and their parents. Eight studies assessed AE, and only parental views were evaluated. Parents reported a significant impact on leading a normal family life, and they highlighted the time-consuming nature of treatment, the impact

on the parent–child relationship (both negative and positive), impact on parents' work and mental well-being, and potential for relationship conflicts. Parents described significant mistrust of medical advice. This review suggests that a holistic assessment to ascertain the psychological impact of AE on children and their families may be useful as part of a child's AE management plan.

Impact on educational attainment

Examining the impact of AE on education attainment, von Kobyletzki *et al.*¹⁸ found just one birth cohort study involving 1865 children. This study investigated whether AE affected performance in two assessments made at the age of 11 years and found no association between AE and educational attainment.

Impact on choice of career

An SR by Radon *et al.*¹⁹ examined the impact of AE on occupational hand eczema (HE) and included nine cohort studies (12 575 participants). AE was confirmed as a main risk factor for occupational HE. The authors proposed that career advice for young people with atopy should be tailored to ensure that they are informed about high-risk occupations with a view to early introduction of preventative measures or avoidance of certain careers.

Nomenclature

Variable terms are used to describe AE. Kantor *et al.*²⁰ reviewed the frequency in which terms have been used in articles published in the scientific literature between 1945 and 2016. The most commonly used term was 'atopic dermatitis', followed by 'eczema' (which is the term recommended by the World Allergy Organisation²¹), then 'atopic eczema'. The frequency of each term varied by country. The authors recommended standardization of terminology and proposed that atopic dermatitis should be adopted as the preferred term as 'eczema' is less specific. Consensus discussions are now required to achieve global agreement on this matter. Improved consistency could facilitate comparisons across studies and be less confusing for nonspecialist audiences.

Acknowledgements

This work was carried out as part of the UK Dermatology Clinical Trials Network (UK DCTN) Fellowship

scheme. The UK DCTN is grateful to the British Association of Dermatologists and the University of Nottingham for financial support of the Network.

Learning points

- Use of multiple, often unvalidated, outcome measures remains a problem in AE clinical trials and hampers the ability to compare studies and synthesize evidence.
- Composite measures incorporating patient-reported symptoms and physician-assessed clinical signs can cause difficulties with interpretation, and can make it difficult to extract information relevant to the core outcome domains of clinician-reported signs and patient-reported symptoms.
- Long-term control of AE has been measured variably in studies, ranging from repeated measurements of clinician-reported or patient-reported outcomes, use of AE treatments and AE flares/remission.
- Existing instruments for capturing HRQoL lack validation in patients with AE.
- AE has a moderate impact on HRQoL in children, and can have a substantial impact on parents and families as well as on the affected children.
- One birth cohort study found no impact of AE on educational attainment at 11 years.
- AE is a major risk factor for occupational hand eczema.
- The terminology used to describe AE varies in the literature, with the most commonly used term being 'atopic dermatitis'.
- Worldwide consensus discussions are required to agree a standard nomenclature for the disease.

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CPD questions

Learning objective

To demonstrate up-to-date knowledge of nomenclature and outcome assessments in atopic eczema.

Question 1

Which of the following has not been identified by the Harmonising Outcome Measures for Eczema initiative as a core outcome domain for atopic eczema studies?

- (a) Clinical signs.
- (b) Long-term control.
- (c) Medication use.
- (d) Quality of life.
- (d) Symptoms.

Question 2

Which of the following statements about atopic eczema (AE) is correct?

- (a) Long-term control is best assessed by the number of AE flares over a period of time.
- (b) Half of the AE trials published since 2000 have included a quality of life outcome measure.
- (c) The most commonly used term in the scientific literature is 'eczema'.
- (d) The Children's Dermatology Life Quality Index is a validated measure for evaluating the impact on quality of life in children with AE.
- (e) Use of composite scores combining clinical signs and symptoms can be problematic.

Question 3

Which of the following scales is used to measure patient-reported symptoms of atopic eczema?

- (a) Eczema Area and Severity Index.
- (b) Investigator's Global Assessment.
- (c) Patient-Oriented Eczema Measure.
- (d) Dermatitis Life Quality Index.
- (e) SCORing Atopic Dermatitis.

Question 4

Which of the following statements about the impact of atopic eczema (AE) is correct?

- (a) Qualitative research has primarily focused on the impact of AE on affected children rather than their family.
- (b) There is evidence that children with AE have a lower educational attainment.
- (c) The Children's Dermatology Life Quality Index is a useful instrument for measuring quality of life for the whole family.
- (d) Young people with AE are at increased risk of developing occupational hand eczema.
- (e) Sleep loss is the symptom most commonly captured in AE studies.

Question 5

Which of the following tools have been used for the measurement of symptoms in atopic eczema? (IGA, Patient-Oriented Eczema Measure; ISS, Itch Severity

Scale; POEM, Patient-Oriented Eczema Measure; PO-SCORAD, Patient-Oriented-SCORing Atopic Dermatitis; SCORAD, SCORing Atopic Dermatitis.)

- (a) ISS, POEM, PO-SCORAD.
- (b) SCORAD, POEM and ISS.
- (c) IGA, POEM and ISS.
- (d) IGA, PO-SCORAD and POEM.
- (e) ISS, PO-SCORAD and IGA.

Instructions for answering questions

This learning activity is freely available online at <http://www.wileyhealthlearning.com/ced>

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