

BRIEF REPORT

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The Effectiveness of Written Action Plans in Atopic Dermatitis

Abstract: Atopic dermatitis (AD) is a chronic dermatosis requiring a stepwise and dynamic approach to management. The use of written action plans has been shown to improve outcomes in other chronic diseases that require a similar incremental approach. A systematic review was performed to evaluate the effect of a written eczema action plan (EAP) in AD management and to identify characteristics of effective action plans in children with eczema. Only two trials were identified as eligible, which highlights the need for more research on EAPs.

Written actions plans have demonstrated benefit in treatment adherence and outcomes in individuals with asthma (1). Based on similarities between atopic dermatitis (AD) and asthma, a systematic review

was performed to determine whether an eczema action plan (EAP) demonstrates benefit in AD.

Medline, Embase, and Cochrane Central databases were searched for controlled trials evaluating EAPs for adult and pediatric populations. Two reviewers independently screened 419 titles and abstracts, yielding 18 full article reviews and resulting in 2 eligible studies (Fig. 1, Table 1). Meta-analysis could not be performed because of the heterogeneity of eligible studies.

Duhovic et al (2) performed a nonrandomized controlled trial of an EAP; patients received written information on AD ($n = 30$) or written information plus an EAP ($n = 32$). Both groups experienced a reduction in disease severity and improvement in quality of life at the 6-week follow-up on validated scales. Although the EAP group experienced a greater reduction in severity, this was from higher baseline scores, and the difference was not statistically significant. Ninety percent of the EAP group rated the intervention as useful or very useful.

Shi et al (3) performed a randomized controlled trial comparing an EAP ($n = 18$) with verbal instruction ($n = 19$). Patients and caregivers were surveyed on knowledge of AD self-management immediately

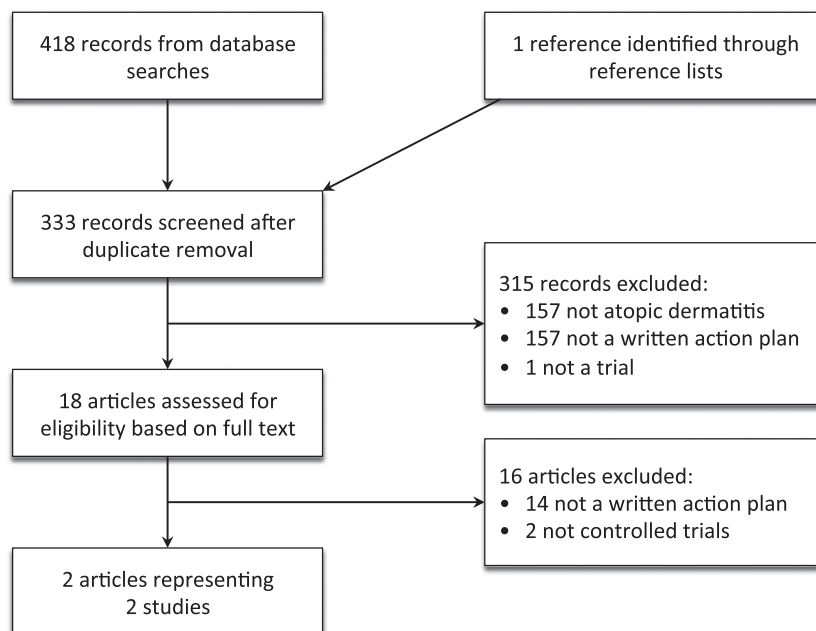


Figure 1. Trials selected for inclusion in the review.

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TABLE 1. Summary of Eczema Action Plan (EAP) Publications

	Duhovic et al (2)	Shi et al (3)	Rork et al (4)	Scharrer et al (5)
Eligible study	Yes	Yes	No	No
Study type	Nonrandomized controlled trial	Randomized controlled trial	Survey of patients and caregivers at baseline and 3- to 12-month follow-up	Retrospective chart audit in 2009, 2011, and 2012
Participants, <i>n</i>	62	37	35	150
Control participants, <i>n</i>	30	19	—	100 (2009, 2011)
Intervention participants, <i>n</i>	32	18	—	50 (2012)
Age, years				
Control subjects	2.3 (mean)	41.1* (mean)	—	< 12 years old
Intervention subjects	2.1 (mean)	37.2* (mean)	Range: 4 months to 17 years <1 = 12 (34%) 1–4 = 14 (40%) 5–9 = 4 (12%) >9 = 5 (14%)	< 12 years old
Baseline SCORAD severity				
Control	30.9	—	—	—
Intervention	43.3	—	—	—
Baseline subjective severity				
Control	—	IGA 1: Almost clear—5 (26%) 2: Mild disease—11 (58%) 3: Moderate disease—3 (16%)	—	—
Intervention	—	IGA 1: Almost clear—7 (39%) 2: Mild disease—7 (39%) 3: Moderate disease—3 (17%) 4: Severe disease—1 (6%)	Self-rated Severe—18 (51%) Moderate—16 (46%)	—
Quantified benefit or results	Control versus intervention (EAP) did not demonstrate statistically significant improvement in: SCORAD ↓: 34% (control), 46% (EAP) Children's Dermatology Life Quality Index ↓: 65% (control), 56% (EAP) Dermatitis Family Impact questionnaire ↓: 24% (control), 17% (EAP) 90% of the intervention group rated the intervention as useful or very useful	Control (oral instruction) versus intervention (EAP) demonstrated statistically significant ↑ in understanding of: Daily treatment plan Benefits and risks of medication Application location Duration of treatment Exacerbating factors Adjusting treatment based on severity Comfort with treatment plan Anxiety for AD care at home	Subjective improvement of AD: 28 (80%) Attributed improvement to EAP: 19 (68%) EAP helpful: 30 (86%) EAP clarified which medication to use with exacerbation: 30 (86%)	Implementation of EAP led to increases in charting (2009 vs 2012): How to recognize flares: 68% → 98% How to treat infected eczema: 24% → 98% How to recognize eczema herpeticum: 4% → 98% Assessment of quality of life: 38% → 92% Quantity and types of prescribed emollients: 18% → 100%

SCORAD, SCORing Atopic Dermatitis; IGA, investigator global assessment.

*11 of 19 control and 8 of 18 intervention subjects were caregivers.

after receiving either intervention. The EAP group demonstrated statistically significant improvement in AD recognition, management, and prevention. EAP elements perceived as most beneficial were stepwise treatment, visualization, and daily reminders. The authors concluded that the 3 to 5 additional minutes for EAP teaching may reduce future visit duration,

decrease patient suffering, decrease associated costs, and improve clinical responses.

Two additional ineligible studies provided further insight into EAP utility. In a 2012 survey, the majority of patients and caregivers found EAPs useful (e.g., type and timing of medication self-initiation) (4). A 2013 chart audit found that EAPs dramatically

improved documentation of AD management, including step-up treatment plans for flares (5).

Although evidence examining EAPs is limited, there is promise of benefit. Future randomized trials examining validated EAPs should aim to evaluate objective clinical improvement and subjective patient and caregiver perception using validated scales.

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