

The Importance of improving Skin Barrier Function in Atopic Dermatitis Patients

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Synopsis

Atopic dermatitis (AD) is a chronic, relapsing, inflammatory skin disease, which is part of the atopic triad, AD, asthma and hay fever. The clinical diagnosis includes pruritus, erythema, scaling, edema, excoriations/erosions, oozing, crusting and lichenification.¹ Moisturizers are widely used products that are important in many dermatologic skin therapies. They contain varying combinations of emollients and humectants to achieve their beneficial effects.²

Objective/Purpose

The aim of this review was to explore the role of a moisturizer for improving skin barrier function in atopic dermatitis patients.

Methods:

We reviewed clinical data exploring experience with the use of a moisturizer* that contains ingredients such as sunflower oil, canola oil and a lipid complex of omega 3/α-linolenic acid, omega 6/linolenic acid, ceramides 1, 3, 6 as well as phytosphingosine and cholesterol (Table 1).

Table 1: Ingredients of the evaluated moisturizer*

Lipids	Sunflower Oil	Canola Oil	Other
Omega 3/α-linolenic acid	0.2%	0.5%	
Omega 6/linolenic acid	70%	5%	
Ceramides 1,3,6 phytosphingosine			Biotechnical
Cholesterol			Plant
Physiological pH: 5.0 < pH 7.0 Fragrance-free formula, Paraben-free			



Helianthus annuus grown in Europe



Brassica campestris grown in Canada



Table 2: Clinical studies selected for the review

No	Study type	Population (N)	Results	P value
1	DB placebo controlled RCT (PL) 03 - 2012 till 06 - 2013	Children (6 m -15 yrs) (N=130/ n=65/n=65) Moderate AD	↓ disease state SCORAD at 6 m* ↓ no. flares ↑ time between flares ↓ days on TCS/TCI	*p<0.05
2	Observational study (BUL) 2015	N = 125 > 6 m Mild-moderate AD	↓ SCORAD at 8 weeks	*p<0.05
3	Prospective study (F) 11-2014 till 06-2015	N = 1759 > 3 m (n=610 (34.7%) very dry skin (n=1149 (65.3%) dry skin during AD flares	↓ clinical signs of AD at 21 days ↓ dryness and pruritus at 21 days	*p<0.0001 *p<0.0001

DB = double-blind, RCT = randomized controlled trial, TCS = topical corticosteroid, TCI = topical calcineurin inhibitor, SCORAD=scoring atopic dermatitis scale, m=month, yrs=years, PL=Poland, BUL=Bulgaria, F=France

Patients with moderate AD all received TCS or TCI in combination with the moisturizer
Moisturizer application was twice daily

Results:

Moisturizing treatment involves improving skin barrier function, retaining/increasing water content, reducing trans-epidermal water loss, restoring the lipid barriers' ability to attract, hold and redistribute water, and maintaining skin integrity and appearance.^{1,2} Three clinical studies were included in the review (Table 3). The results of study 1 are presented in Fig 1.

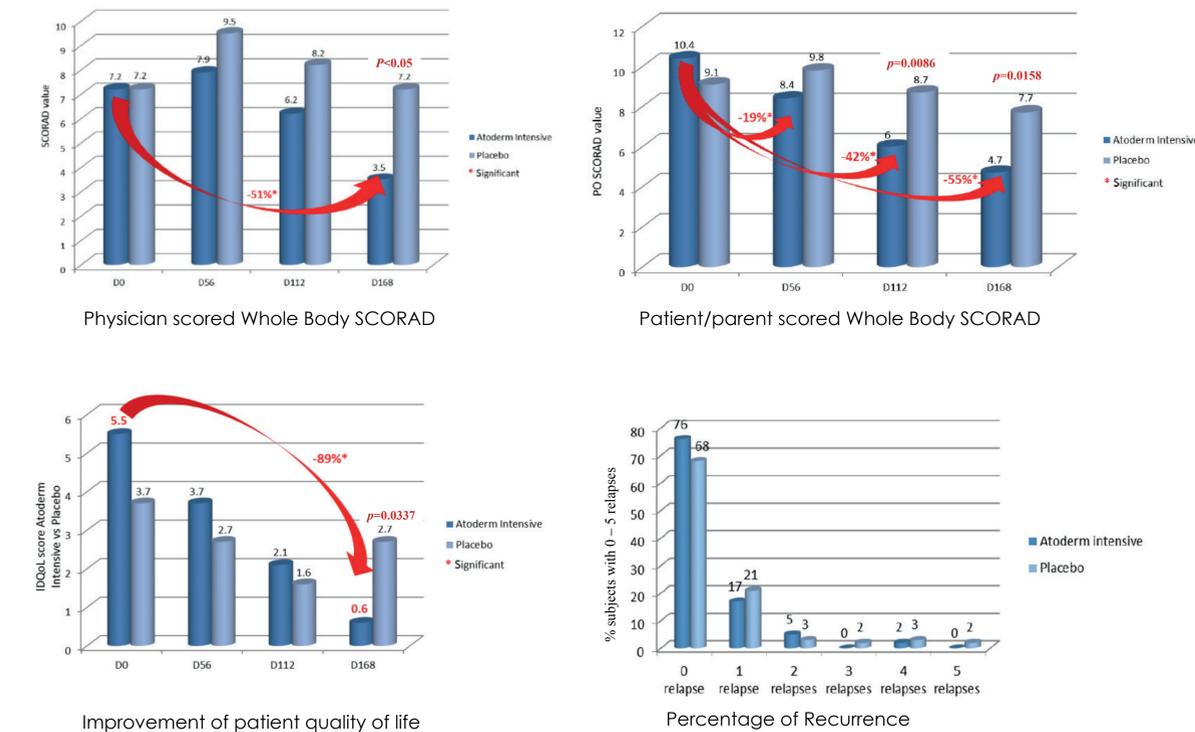
Study 2: In an observational study including 125 children (>6 months of age) with mild-to-moderate AD similar results were shown. At 8 weeks follow up there was a significant improvement (SCORAD) noted in skin condition (p<0.05).

Study 3: A further prospective study including 1759 subjects (> 3 months) with atopic skin showed a significant (p<0.0001) reduction in clinical signs of AD at 21 days.

References:

- Eichenfield LF et al. JAAD 2014;70:338-51.
- Hanfin JM, et al. J Am Acad Dermatol. 2005; 52(1):156

Fig. 1: Study 1: Placebo Controlled Double-blind RCT



Study 1: In a double-blind placebo controlled trial 130 (65/65) children, aged 6 months to 15 years, with moderate AD were followed for 6 months. Patients with moderate AD all received TCS or TCI in combination with the moisturizer or the placebo. Skin condition (SCORAD) had significantly improved (p<0.05) in the moisturizer group compared to the placebo treated patients. Additionally the number of flares had reduced as well as the amount of time TCS or TCI were used.

SCORAD=scoring atopic dermatitis scale
Data on file: Study from March 7th 2012 to June 19th 2013

Conclusions:

A defective skin barrier in AD patients is open to water loss and invasion of allergens. Moisturizers are a mainstay of therapy for AD and can be combined with other treatments. The evaluated moisturizer was shown to be effective in improving skin condition in AD affected patients.