Efficacy and Tolerability of a Double-Conjugated Retinoid-Containing Eye Cream in Subjects with Fine to Moderate Wrinkles of the Periorbital Region

Kaufman J, MD[1]; Callender V, MD, FAAD[2]; Young CM, MD[2]; Jones P, MD[2]; Wortzman M, PhD[3]; Nelson DB, RN, MPH[3]

[1]Skin Research Institute, Coral Gables, FL; [2]Callender Center for Clinical Research, Glenn Dale, MD; [3]skinbetter science, LLC, Phoenix, AZ

INTRODUCTION

- The periorbital region is one of the first areas to show signs of age-related changes.[1]
- Individuals notice and seek treatment for periorbital rejuvenation sooner than other facial zones due to epidermal and dermal changes to periorbital skin.[1]
- Thinner than other regions of the face, possessing fewer oil glands and subject to repetitive contractions, skin around the eyes is susceptible to environmental factors and accelerated skin aging.[1-4]
- Topical retinoids are a mainstay treatment for photoaged skin. However, use is often avoided around the eye owing to concerns of skin irritation.[4]
- A new, hydrating eye cream (AHARet-EM) comprised of a double-conjugated retinoid/alpha hydroxy acid molecule (AHA; lactic acid) has been optimized for nightly treatment of age-related changes of the periorbital region.
- Herein, we describe a study evaluating the benefits of nightly application of AHARet-EM alone or in combination with morning application of a lightweight, peptide-rich eye cream (InF-E) in the periorbital region.

OBJECTIVES

- To evaluate the efficacy, tolerability and subject satisfaction following nightly application of AHARet-EM and morning application of a peptide-rich eye cream (InF-E; AM) over 12 weeks.

METHODS

- A dual-center, open-label study evaluated nightly application of AHARet-EM in subjects with fine to moderate lines and wrinkles around the periorbital region over 12 weeks (Group 1). A subset of subjects applied AHARet-EM (PM) and InF-E (AM) over 12 weeks (Group 2).
- Subjects, 35-65 years of age, with fine to moderate lines and wrinkles around the periorbital and under-eye region (score of 3-7 based on the 9-point Fitzpatrick Classification Wrinkle Scale [FCWS]), were eligible for enrollment.
- Exclusion criteria included dermatological disorders (e.g., severe acne vulgaris), autoimmune diseases; current or recent use (within prior 2 weeks) of any cosmetic product containing AHAs, peptides, growth factors, skin lightening/brightening agents; current or recent use (within prior 4 weeks) of non-prescription retinoids/retinols or other vitamin A derivatives; current or prior use (within prior 2 months) of products containing prescription retinoids or hydroquinone, or any product that in the investigator's opinion, would interfere with the study.
- Subjects who had undergone chemical peels, microdermabrasion, microneedling, or like procedure within the prior 3 months were also excluded from study participation.
- Subjects were excluded if they had undergone any of the following skin treatments or procedures in the periorbital region in the prior 6 months: botulinum toxin injections, dermal filler injections, non-ablative laser resurfacing or like treatment/procedure, radiofrequency and/or ultrasound.
- Subjects who were pregnant, lactating or planning a pregnancy during study period were excluded.
- Investigator assessments based on the 9-point FCWS (1 [fine wrinkles] to 9 [deep wrinkles]) evaluated changes in the appearance of lines and wrinkles following nightly application of AHARet-EM (Group 1) or AHARet-EM (PM) + InF-E (AM; Group 2) from baseline at 4, 8 and 12 weeks.
- Investigator assessments based on a 6-point grading scale (0 [None] to 5 [Severe]) evaluated changes in the appearance of skin texture, under-eye darkness, erythema, under-eye puffiness, and under-eye dryness following nightly application of AHARet-EM (Group 1) or AHARet-EM (PM) + InF-E (AM; Group 2) from baseline at 4, 8 and 12 weeks.
- Subjects completed self-assessment questionnaires and Adverse Events (AEs) were captured throughout the study period.
- Subjects were provided with a facial moisturizer, cleanser, and a mineral-based sunscreen (SPF 56).

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RESULTS

DEMOGRAPHICS

- 29 subjects were enrolled, 26 subjects completed the study (Group 1, n=16; Group 2, n=10).
- Mean age of enrolled subjects was 52 (Group 1) and 51 years (Group 2).
- 52% of enrolled subjects were FST IV; 31%, FST III; 14%, FST V; 3%, FST VI.

EFFICACY

Investigator Evaluations

- Subjects enrolled in Group 1 demonstrated significant mean improvements in appearance from baseline at week 12 in the following categories: 94% improvement in under-eye dryness, 55% improvement in under-eye puffiness, 41% improvement in under-eye darkness, and a 37% improvement in erythema and skin texture (Table 1).
- Subjects enrolled in Group 2 demonstrated significant mean improvements in appearance from baseline at week 12 in the following categories: 90% improvement in under-eye dryness, 68% improvement in erythema, 64% improvement in under-eye puffiness, 33% improvement in skin texture, and a 32% improvement in under-eye darkness (Table 2).

Table 1. Mean percent visible improvement from baseline.

GROUP 1			
	WK 4	WK 8	WK 12
WRINKLES	18% (p<.0001)	26% (p<.0001)	33% (p<.0001)
TEXTURE	20% (p=.005)	38% (p<.0001)	37% (p<.0001)
ERYTHEMA	24% (p=.05)	38% (p=.004)	37% (p=.004)
UNDER-EYE DARKNESS	27% (p=.0008)	31% (p<.0001)	41% (p<.0001)
UNDER-EYE PUFFINESS	28% (p=.009)	50% (p<.0001)	55% (p<.0001)
UNDER-EYE DRYNESS	43% (p=.001)	81% (p<.0001)	94% (p<.0001)

Table 2. Mean percent visible improvement from baseline.

GROUP 2			
	WK 4	WK 8	WK 12
WRINKLES	10% (p=.15)	3% (p=.79)	4% (p=.77)
TEXTURE	16% (p=.01)	32% (p=.002)	33% (p=.002)
ERYTHEMA	42% (p=.04)	57% (p=.03)	68% (p=.001)
UNDER-EYE DARKNESS	13% (p=.03)	20% (p=.04)	32% (p=.007)
UNDER-EYE PUFFINESS	42% (p=.09)	77% (p=.006)	64% (p=.01)
UNDER-EYE DRYNESS	47% (p=.003)	83% (p<.0001)	90% (p<.0001)

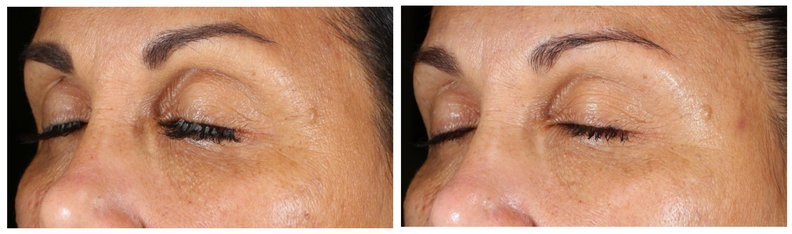
Subject Satisfaction

- Subjects in both groups reported high levels of satisfaction throughout the study period.
- Group 1: At 8 weeks, 100% of subjects reported improvement in the appearance of skin around their eyes and would recommend AHARet-EM to friends or family. Ninety-five percent (95%) of subjects reported improvement in the appearance of skin brightness, visible reduction of lines and wrinkles, and eyes were less tired looking.
- Group 2: At 8 weeks, 100% of subjects reported improvement in the appearance of skin under their eyes, and that their eyes looked brighter and were less tired looking.

Tolerability

- No AEs were reported that were related to study products, and no subject discontinued study owing to an AE.

Figures 1a-b (Group 1): Improvement in under-eye darkness, puffiness and texture from baseline to week 8.



Figures 2a-b (Group 1): Improvement in lines/wrinkles, under-eye darkness and texture from baseline to week 12.

Figures 3a-3b (Group 2): Improvement in under-eye darkness and puffiness from baseline to week 12.

Figures 4a-4b (Group 2): Improvement in lines/wrinkles and under-eye darkness from baseline to week 12.

CONCLUSIONS

- Nightly application of a hydrating, double-conjugated retinoid/AHA-based eye cream demonstrated significant improvements in the appearance of periorbital lines and wrinkles, skin texture, erythema and under-eye darkness, puffiness, and dryness as early as 4 weeks.
- Significant, progressive improvements were observed through 12 weeks in all categories.
- In combination with nightly use of a hydrating, retinoid-containing eye cream, morning application of a peptide-rich eye cream afforded additional benefits with greatest improvements observed in under-eye dryness and puffiness, and erythema at 12 weeks.
- Subjects reported high levels of satisfaction with both product regimens throughout the study period.
- Study products were highly tolerable with no reports of AEs occurring related to product use.
- Topical retinoid-based skincare products are mainstays in the management of photoaged skin but are often too irritating for use in the periorbital region.
- This study supports the use of an effective, non-irritating retinoid-based option, alone or in combination with a peptide-based cream, to manage photoaging in the periorbital region.

References: (1). Bucay VW, et al. Clin Plastic Surg. 2013;40:225-236. (2). Buchanan DR, et al. Clin Plastic Surg. 2015;42(1):1-15. (3). Fitzgerald R. Clin Plastic Surg. 2013;40:21-32. (4) Pilkington SJ, et al. J Clin Aesthet Dermatol. 2015;8(9):39-47.

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