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ORIGINAL CONTRIBUTION

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A single-center, pilot study evaluating a novel TriHex peptide- and botanical-containing eye treatment compared to baseline

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Summary

Background: Topical treatments containing tripeptide and hexapeptide (TriHex technology) have been proven to contribute to youthful skin by clearing the extracellular matrix and stimulating collagen and elastin production.

Objective: Evaluate the efficacy of a novel eye treatment containing TriHex peptides and other synergistic ingredients for the daily treatment of fine lines/crow's feet around the eyes, under eye hollowing, under eye bags, and dark circles.

Patients/Methods: In this study, 10 subjects (9 female and 1 male) aged 30-60 of Fitzpatrick skin type I, II, or III were selected to use an eye treatment containing TriHex peptides and active botanicals (Alastin Restorative Eye Treatment with TriHex Technology™, ALASTIN Skincare, Inc., Carlsbad, CA) twice daily for 12 weeks. Subjects were photographed and evaluated at baseline, week 4, week 8, and week 12 by a board-certified facial plastic surgeon. Using an adjusted Griffiths scale (0 = none, best possible condition and 9 = severe, worst possible condition), subjects were evaluated on severity of fine lines/crow's feet, under eye hollowing, under eye bags, and dark circles at each visit. Subjects completed a "Subject Questionnaire" at week 4, week 8, and week 12 pertaining to the subject's observations and perceived improvement of these measures.

Results: Based on the investigator's assessments, overall improvement in periocular skin was noted for all 10 subjects. Over the course of 12 weeks, raw scores significantly decreased indicating reduction of lines/crow's feet (41% improvement), under eye hollowing (29% improvement), under eye bags (48% improvement), and dark circles (39% improvement). Based on the "Subject Questionnaire," all subjects noted overall improvement of the appearance of skin around the eyes.

Conclusion: Based on the findings of this study, this eye treatment containing TriHex peptides and active botanicals is an effective stand-alone treatment for the rejuvenation of periocular skin. When used twice daily, this product can reduce the appearance of lines/crow's feet, under eye hollowing, under eye bags, and dark circles.

KEYWORDS
anti-aging, elastin, extracellular matrix disruption, eyelid, hexapeptide, tripeptide

1 | INTRODUCTION

The use of topical anti-aging treatments is a popular mechanism to slow the visible signs of aging of the skin. Peptides, active ingredients in many anti-aging treatments, are linked to reversal of sun damage and rhytids.[1] A new skincare company has developed a series of products that aid in the treatment of aging skin by addressing its causes: disruption of the extracellular matrix, fragmentation, and loss of collagen and elastin. This is accomplished by technology delivering a unique combination of tripeptide, hexapeptide, and other active agents (TriHex technology) that promote neocollagenesis and neoelastogenesis, resulting in firmer, more youthful looking skin.[2] The TriHex peptides and botanical formulation have proven effective in aiding skin healing and rejuvenation, particularly after laser resurfacing treatments.[3] Use of products containing this patent-pending peptide and botanical combination is associated with decreased inflammation, expedited healing, and overall enhanced results after procedures.[3] This eye cream is a new addition to the daily use skincare line and offers the same benefits of clearing the extra-cellular matrix, stimulating collagen and elastin production, plumping the skin, and visibly rejuvenating the appearance of skin over time.[2] This product was introduced to address the need for effective topical anti-aging treatments for the sensitive skin around the eyes. The current study seeks to investigate the efficacy of this unique eye cream as a stand-alone treatment for periocular skin rejuvenation.

2 | MATERIALS AND METHODS

2.1 | Study design

This was a single-center pilot study evaluating the improvement of fine lines, under eye hollowing, under eye bags, and dark circles with bi-daily use of this restorative peptide and botanical eye treatment. This was performed over a 12-week period, during which time subjects were evaluated every 4 weeks by a board-certified facial plastic surgeon.

2.2 | Materials

The only product used in this study was the eye treatment. The primary active ingredients in this product are the TriHex technology and additional peptides as well as multiple extracts aimed at reducing puffiness, dark circles, and sagging eyelids.

2.3 | Subjects

Ten subjects (9 female, 1 male), ages 30-60, were selected to participate in the trial based on predetermined criteria. Eligible subjects were categorized as Fitzpatrick Skin Type I, II, or III and had mild-to-severe wrinkling around the eyes. Exclusion criteria included subjects who have previously had a neuromodulator treatment, such as Botox, in the eye area within the past year. Although periocular filler was not specifically listed as an exclusion criterion, it was not necessarily relevant if the patient demonstrated moderate/severe hollowing of the under eyes. Regardless, all subjects denied previous injectable treatments to the face. Subjects were also prohibited from receiving neuromodulators or any other resurfacing or peeling treating during the course of the study. Any subjects who reported using other products were asked to discontinue them for the duration of this study. Subjects were given information about the product to be studied and informed that participation was voluntary. Subjects were not compensated for participation, although product was provided to them to utilize for the study.

2.4 | Methods

Standard DSLR photographs of each subject were taken at baseline (week 0), week 4, week 8, and week 12. Frontal, oblique, and profile views were taken of each subject at rest and smiling (4 visits total). Canfield Vectra 3D photographs were taken of subjects at each visit (4 visits total). Subjects were given one tube of the eye treatment to use each month twice daily. Subjects were instructed to apply the cream around and under the eyes after cleansing face in the morning and evening. The investigator evaluated each subject at baseline (week 0), week 4, week 8, and week 12 using an adjusted Griffiths scale. The investigator did not allow subjects to comment on or share their survey results at any time during the completion of the study. The investigator did not view or review any of the patient questionnaires during the study. These measures were undertaken to minimize bias. Subjects also completed a self-assessment at baseline (week 0), week 4, week 8, and week 12.

2.5 | Adverse events

During the 12-week study, no subjects reported any adverse events such as allergic reaction, skin irritation, or eye irritation. No minor or serious adverse events were noted whatsoever with this product.

3 | RESULTS

3.1 | Investigator assessment results

The investigator rated the improvement using an adjusted Griffiths 10-point scale (0 = none, best possible condition and 9 = severe, worst possible condition). When compared to baseline values, the investigator rated overall reduction in the appearance of crow's feet, under eye hollowing, under eye bags, and dark circles (Figures 1 and 2) for all subjects. In addition, the investigator assessment data from the adjusted Griffiths scale show a steady decrease in score from baseline to the 12-week follow-up, indicating reduction of lines/crow's feet (41% improvement, [$P = .0075$]), under eye hollowing (29% [$P = .0026$] improvement), under eye bags (48% improvement [$P = .0020$]), and dark circles (39% improvement, [$P = .0012$]).

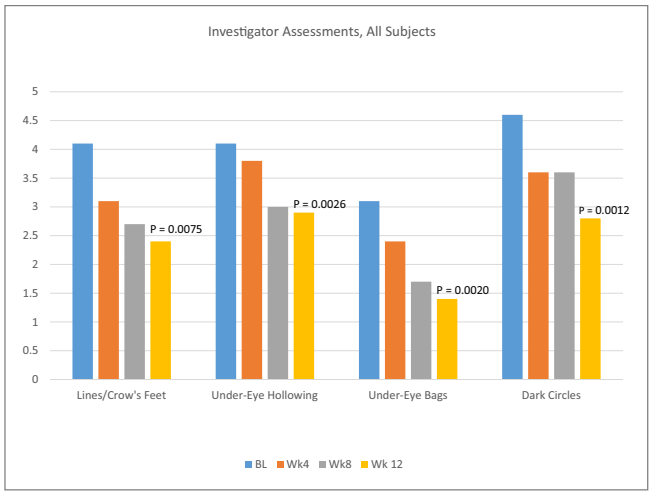

FIGURE 1 Investigator Assessment Percent Improvement from Baseline, Week 4, Week 8, Week 12

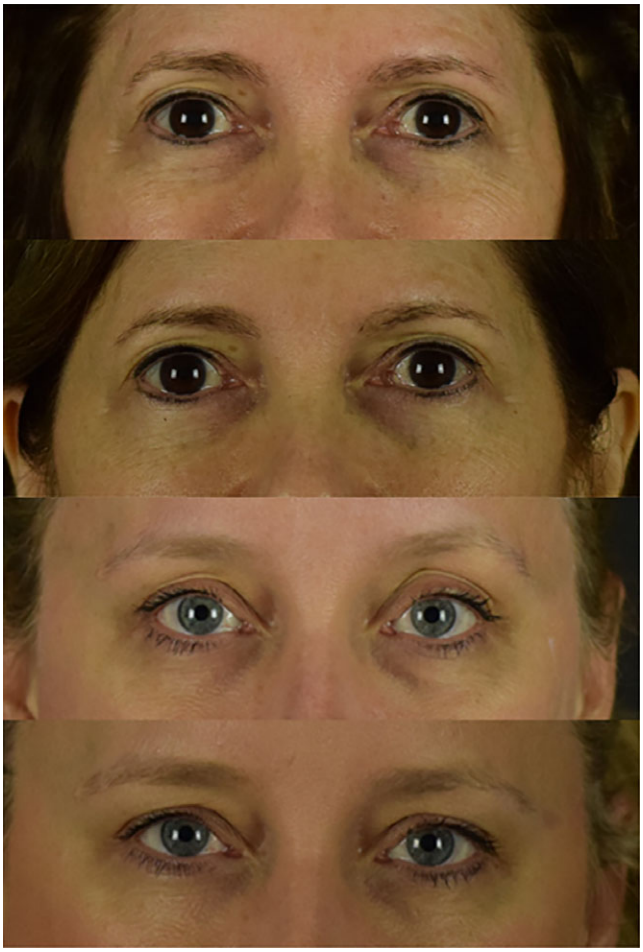

FIGURE 2 Clinical results at baseline and week 12

3.2 | Subject questionnaire results

Subjects completed a 16-item "Subject Questionnaire" at week 4, week 8, and week 12 surveying each subject's experience using the product. On average, 100% of subjects agreed/strongly agreed that the skin around the eyes looks more youthful, more luminous, and healthier. About 90% of subjects agreed/strongly agreed that skin around the eyes feels firmer, eyes look less puffy, and less tired. About 70% of subjects agreed/strongly agreed that deep wrinkles and dark circles around the eyes were less visible (Figure 3).

4 | DISCUSSION

Collagen and elastin production are essential elements of healthy, youthful looking skin. Many products on the market claim to restore elastin and collagen, especially around the eyes, with little to no scientific evidence to support their claims. The benefits of the TriHex technology have been repeatedly proven to enhance skin by stimulating production of elastin and collagen, acting as an antioxidant, reducing inflammation, and contributing to youthful looking skin over time.[3] Although the original products containing TriHex peptide and botanical technology were developed primarily for use after laser resurfacing treatments, a daily skin care line was recently introduced, incorporating these same active ingredients, to address the issues associated with aging/environmentally damaged skin by stimulating collagen and elastin production and clearing debris from the extra cellular matrix. The efficacy of the product has been demonstrated in a controlled clinical trial to be published in the near future.[4]

The investigator's assessment of each subject indicated significant overall improvement in the appearance around the eyes attributed to use of the product twice daily. Moreover, subjects themselves noted improvement in the appearance of the skin around the eyes and most agreed that they would recommend this product to a friend.

Limitations of this study include the small sample size, lack of histological data, and potential for subject and evaluator bias, although efforts were made to minimize bias as discussed previously. There are also limitations associated with a 3-month trial period. For example, any noted improvement may have plateaued at 3 months; therefore, the long-term durability of improvement cannot be definitely proven based on this study alone. While the trial period itself cannot show long-term improvement associated with this product, 3 months is a timeline in keeping with other publications.

Aside from its proven record in aiding outcomes related to skin resurfacing, the findings of this study indicate that TriHex peptides and botanical technology is also effective when incorporated into a formulation specifically designed for eyelid skin rejuvenation. Many people struggle with stubborn crows feet, under eye bags, dark circles, and under eye hollowing; however, they prefer topical treatments to injectables. The investigator's assessment indicates that significant improvement is possible with 3 months of continued use of this eye treatment. Although no concurrent therapies were permitted during this study, the use of other modalities to improve the skin in addition to this product would likely yield synergistic effects.

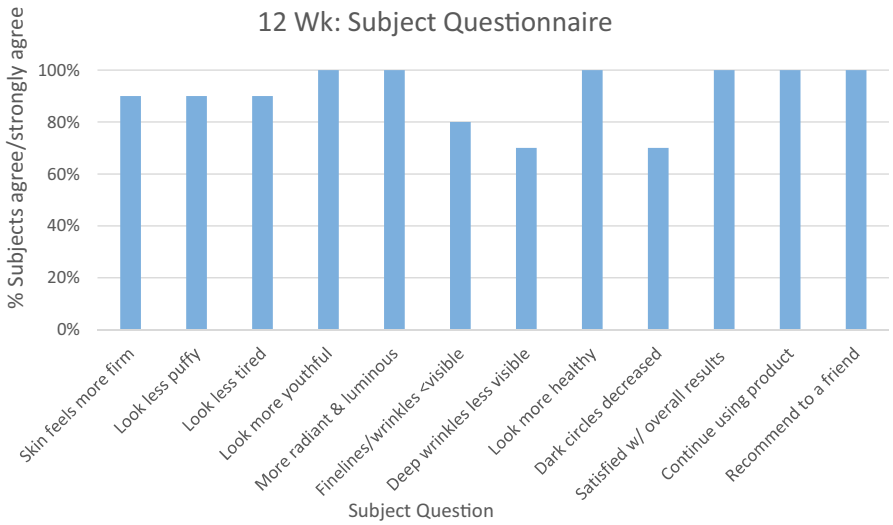

FIGURE 3 Subject Questionnaire at 12 Weeks

5 | CONCLUSION

Based on the findings of this study, TriHex peptides and botanical containing eye treatment is an effective stand-alone treatment for everyday use to address fine lines around the eyes, under eye hollowing, dark circles, and under eye bags. Additionally, because this product contains unique TriHex peptides and synergistic botanicals, it can be used seamlessly in combination with other Alastin Skincare products for a complete, anti-aging skincare regimen.

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