An Evaluation of Efficacy and Tolerability of Novel Enzyme Exfoliation Versus Glycolic Acid in Photo Damage Treatment

Julio Clavijo, MD, PhD; Anne Chapas, MD, and others
Union Square Laser Dermatology, New York, NY

DISCLOSURE/FINANCIAL SUPPORT: Paid consultant for Restorsea.

INTRODUCTION: Glycolic acid has been a gold standard of photodamage treatment. It can cause significant skin irritation by chemically destroying adhesions between skin cells to exfoliate superficial skin layers and excess pigmentation. This study showed that hydrolyzed roe proteins, found in hatching salmon eggs, destroys cell to cell adhesions enzymatically to rejuvenate photodamaged skin with potentially less irritation than acid treatments. The purpose of this double-blinded study is to assess the efficacy and tolerability of hydrolyzed roe versus glycolic acid in home photodamage treatment.

MATERIALS AND METHODS: 75 female subjects, aged 31-70 years, 12-week study. Group 1 (n=19): twice-daily self-treatment using hydrolyzed roe cream. Group 2 (n=17): twice-daily self-treatment with 4% glycolic acid containing cream. Group 3 (n=16): twice self-treatment with 8% glycolic and 2% citric acid cream. All patients used the same mild face wash and SPF 30 sunscreen throughout the study. Patients were evaluated at weeks 0, 8 and 12, for tolerability, improvement in photodamage by VISIA Complexion Analysis (Cannfield, Fairfield, NJ), modified Packman and Gans method and Visual Analog Scale (VAS).

RESULTS: Group 1 using hydrolyzed roe showed improvement from a 44.1 to 55.7 (p=0.0317) on the VAS mean scores in skin tone evenness at week 12. VISIA mean scores correlated with office evaluation and showed improvement in brown spots from 453 to 417 (p=0115) at 12 weeks. Group 2 using 4% glycolic acid cream demonstrated improvement in superficial fine lines at week 8 (-5.9, p=0.0428) and week 12 (-9.1, p=0.0019). Group 3 using 8% glycolic acid and 2% citric acid showed VAS mean score improvement in skin tone evenness from 42.2 to 53.7 (p=0.0469), skin laxity from 39.9 to 26.7 (p=0.0426), and tactile roughness from 60.1 to 45.4 (p=0.0019) at weeks 12. Patients using hydrolyzed roe cream reported significantly less stinging and burning than patient using 8% glycolic acid and 2% citric acid cream.

CONCLUSION: Hydrolyzed roe protein can improve skin tone evenness with good tolerability. Glycolic acid containing compounds showed improvement in the appearance of fine lines, skin tone evenness, skin laxity, and tactile roughness, with more instances of stinging and burning.