INTRODUCTION

Photodynamic Therapy (PDT) with 10% Aminolevulinic acid (ALA) gel and red-light illumination is an approved and efficacious method for the treatment of actinic keratoses (AKs) on the face and scalp. Drug penetration, prolonged incubation time, and pain during light exposure are however drawbacks to this field-directed therapy. Though popular as a cosmetic procedure and collagen induction therapy for facial scars and skin rejuvenation, microinjection is also widely used as a transdermal delivery system for therapeutic drugs, and several clinical studies have shown enhanced AK clinical clearance and cosmetic outcomes when microinjection was performed prior to ALA incubation. 3,4

METHODS

Five qualified subjects (aged 18-75 years, skin types I-IV) with 4 to 8 mild-to-moderate facial AKs were enrolled. All subjects received microinjection of their face followed by the application of 10% ALA gel for 30 minutes, before the treated area was illuminated with red light for 10 minutes. Follow-up (FU) visits were made at weeks 1, 2, 4, and 8. Primary endpoints were changes in photodamage/aging as quantified by the Canfield Visia-CR imaging System, and subject- and investigator-graded Global Aesthetic Improvement Scale (GAIS) scores. Secondary endpoints were AK clearance as quantified by AK count at week-8 vs. baseline, and safety as measured by patient-reported pain on 11-point VAS during illumination and adverse events (AEs) documented at treatment time and each FU visit.

RESULTS

All five subjects completed the study. At the 8-week FU, there was an average 24.93% improvement in Texture and an average 10.30% improvement in Skin Tone (Color) Evenness. Subject- and investigator-GAIS scores (mean ± SD) improved across all visits and were accompanied by 89.2 ± 14.9% (mean ± SD) in AK clearance at week 8. Mean pain score during red light illumination was 3.2 ± 1.6.

CONCLUSIONS

PDT using microinjection-assisted delivery of 10% ALA gel with 30-minute incubation followed by red-light illumination is a safe and tolerable procedure which resulted in good cosmetic outcomes in several skin quality parameters such as texture, skin tone evenness, and a total AK lesion clearance rate of 89.2% at week 8.

REFERENCES

1. 10% ALA Gel (Ameluz®) Prescribing Information

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