NOVEL HUMAN GROWTH FACTOR AND CYTOKINE SKIN CREAM IMPROVES SKIN SURFACE TOPOGRAPHY OF AGED FACIAL SKIN AS ASSESSED BY 3D IN VIVO OPTICAL SKIN IMAGING

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ABSTRACT

In addition to wound healing, growth factors participate in skin rejuvenation by promoting skin proliferation and stimulating collagen formation. The present placebo-controlled study aimed to further investigate the anti-aging effects of a novel skin cream containing a mixture of human growth factors and cytokines. The mixture was obtained through a biotechnology process using cultured human fetal fibroblasts. The skin surface topography was analyzed by 3D in vivo optical skin imaging using the PRIMOS device. This device allows direct, fast measurement of skin surface topography at high resolution. The measurement is contact free and therefore less artificial prone than the silicon replica technique, which is commonly used for that purpose.1,2 The measurement is based on the projection of digital light stripe patterns onto the skin surface followed by the recording of the projected stripes by a camera at a different angle (Fig.1). Employing complex mathematical algorithms, the difference between the projected and recorded light stripe patterns leads to the three-dimensional skin surface topography, which allows measuring the depth of fine skin lines and wrinkles. In addition, the very short measuring time further guarantees that the captured data is little influenced by involuntary movements of the subject.

METHODS

Inclusion criteria
- Female between 35 to 65 years of age
- Good general health
- Not pregnant
- Not nursing
- No history of skin disease affecting the face
- No micromedication, light and medium skin peels within one month, no non-ablative laser, light or radio-frequency treatments in face within three months, any dermabrasion, deep skin peels, ablative laser treatments, Botulinum toxin or filler injections, or cosmetic surgery in face within six months prior to study begin.

Exclusion criteria
- Active or history of any history of skin disease affecting the face
- Any microdermabrasion, light and medium skin peels within one month, any non-ablative laser, light or radio-frequency treatments in face within three months, any dermabrasion, deep skin peels, ablative laser treatments, Botulinum toxin or filler injections, or cosmetic surgery in face within six months prior to study begin.

RESULTS

Of the 20 subjects enrolled, 18 subjects averaged 52 ± 8 years of age (between 38 to 65 years) completed the study. Two subjects dropped out of the study for product unrelated reasons.

CONCLUSIONS

As assessed quantitatively using 3D in vivo optical skin imaging, a skin cream containing a proprietary mixture of human growth factors and cytokines (called PSP or 'processed skin cell proteins') significantly improved peri-orbital skin topography after two months of twice daily application. Skin surface roughness decreased between 10 to 18% depending on the parameter. After treatment with the placebo formulation for two months, only Ra and Rz significantly decreased by about 10%, while the roughness parameters Rzmax, R3z, R3zmax and RzISO did not change significantly. After the two month treatment period, the difference between active and placebo for Rzmax, R3z, R3zmax and RzISO were statistically significant. The differences between active and placebo for Ra and Rz decreased significantly (p = 0.06) and may have reached statistical significance with more subjects.

REFERENCES


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Pictured: a skin before and after application of the cream.