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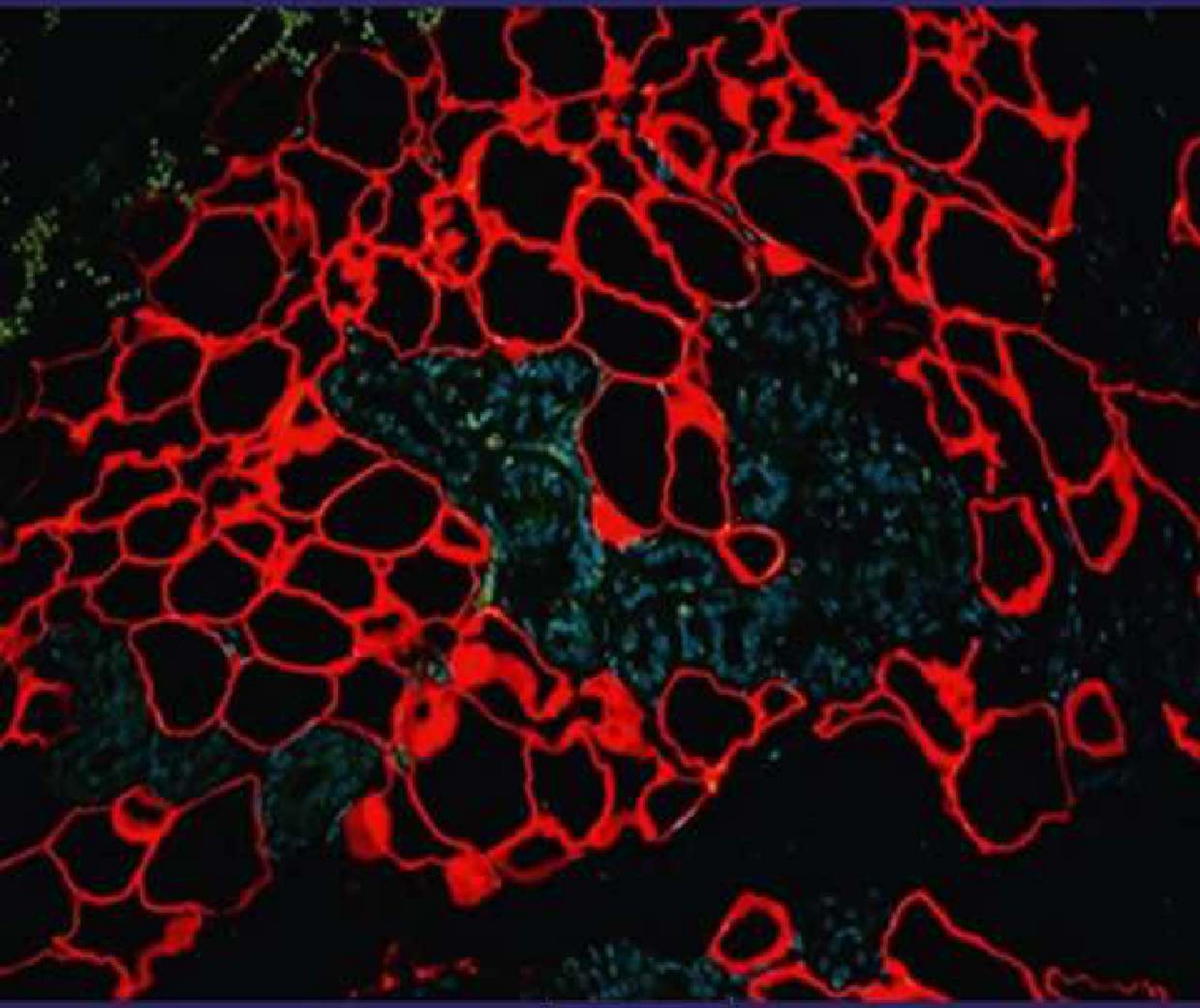

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Prospective and Randomized Comparative Study of Calcium Hydroxylapatite Versus Calcium Hydroxylapatite Plus Hifu in Treatment of Moderate to Severe Acne Scars

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Abstract

Background: Acne scars are the most common sequelae of the severe inflammatory process of acne and its managing is a challenge. Objective of this study was to assess safety and effectiveness of calcium hydroxylapatite monotherapy and its association with high intensity microfocused ultrasound for treating moderate-to-severe atrophic acne scars.

Methods: Women with moderate to severe atrophic scars of the face were enrolled on the study. Assessments were made by digital macro-photographs, Vectra H2, Antera 3D.

Results: From October to December 2019, twenty women which fitted the inclusion criteria signed a consent form and received 3.0 ml of calcium hydroxylapatite and after 4 weeks, 400 lines of HIFU. No major side effects were reported during the study and all patients completed the follow-up after 6 months. At 1 month, patients treated with calcium hydroxylapatite (group 1) improved wrinkles and skin texture compared to placebo (group 2). At 3 and 6 months, all patients improved acne scars.

Conclusions: Our study showed that that both calcium hydroxylapatite and HIFU in monotherapy were safe and effective treatments for atrophic scar acne. Calcium hydroxylapatite was clinically effective when compared with placebo, though the combination of calcium hydroxylapatite and HIFU did not enhance the clinical efficacy compared to monotherapy.

Study Design: Ten patients (CaHA group) were treated with 3.0 ml of CaHA (Radiesse® - Merz North America, Inc., Raleigh, NC, USA), and ten patients (control group) were treated with 3.0 ml of normal saline. A total of thirty microdrops (0.1 ml at each injection point) were delivered subdermally on the face by a 30 G, 13 mm needle. Patients did not receive any post-treatment medication and were asked not to massage the treated areas. The medical treatment was performed in a double blinded manner; neither the injection doctor (first author A.A.) nor the patient knew if the CaHA or the placebo was being administered. After 3 weeks, all patients received 400 lines of HIFU (Hifu Finesse® - Biotec, Dueville, Vicenza, Italy) delivered by a 10 MHz (0.25 J) transducer at a 1.5-mm focal depth able to reach the deep dermis. Ultrasound gel was applied to ensure coupling between the transducer and the skin. The procedure was based on a series of energy spots (1 spot = 100 thermal coagulative points (TCPs) 25 mm long delivered for 50 msec). Each patient received full face treatment except for the upper third (forehead and eyebrows), lower lids, and submental area. Patients did not receive any post-treatment ointment and were asked to gently massage the treated areas for 5 min every day for 8 weeks