TRANSCUTANEOUS ENERGY DELIVERY TO THE FOREHEAD, CHEEKS AND NECK

Susan Walgrave, Irmina Wallander, Brian Zelickson (Minneapolis, MN)

Background and Objectives: Focused ultrasound is capable of producing micro-thermal lesions in the mid to deep reticular dermis causing thermally-induced contraction of tissue and subsequent formation of new collagen. The objectives of this study were to determine the safety and efficacy of a focused ultrasound device (Ulthera™ System) in the treatment of facial and neck skin laxity.

Study Design/Materials and Methods: Thirty-five subjects (skin types I-IV) received one treatment using a single pass with the focused ultrasound device to facial and neck regions. Three transducers were used for different treatment areas as follows: 7.5MHz, 3.0mm focal depth, power 15-30W, exposure duration 10-80 ms (forehead and temple); 7.5MHz, 4.5 focal depth, power 15-30W, exposure duration 10-80ms (preauricular, submental, and neck); and 4.4MHz, 4.5mm focal depth, power 30-40W, exposure duration 10-80ms (cheeks). Standardized images were obtained at baseline and at each follow-up visit 2, 7, 28, 60 and 90 days post-treatment. Clinical endpoints of the study were quantitative assessment of brow position, physician evaluation, subjective pain scores and self-assessment.

Results: Clinically significant brow elevation (greater than 0.5mm) was seen in 56% of subjects 28 days post-treatment, 58% of subjects 60 days post-treatment, and 63% of subjects 90 days post-treatment. A subset of five subjects treated with higher energy on the forehead all demonstrated clinically significant brow elevation 90 days post-treatment. Mild to moderate erythema was seen immediately post-treatment in the majority of subjects with no long-term side effects observed.

Conclusions: The thermal coagulative tissue effect induced by transcutaneous ultrasound delivery to the skin resulted in clinically significant improvement of eyebrow position in the majority of subjects. Further parameter optimization may improve clinical outcomes.