

Reports on Scientific Meetings

ELOS™ Technology Seminar

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Date: 29 July, 2005
Venue: Sheraton Hotel, Tsimshatsui, Kowloon
Speaker: Dr. Neil Sadick
Clinical Professor of Dermatology, Weill Medical College, Cornell University, New York, USA
Organiser: The Hong Kong Society of Dermatology and Venereology

Electro-optical synergy (ELOS™) is a combined-energy technology that uses two energy sources: radiofrequency (RF) and optical energy. The seminar was divided into three sessions. In the first session, the speaker stressed the importance of a structural approach to non-ablative rejuvenation. The photoaging triads consist of wrinkles, skin laxity and uneven pigmentation. A classification of photoaging is useful to target the specific problems for individual patients. Type I photoaging refers to epidermal/superficial components which include pigmentary skin alternation, vascular lesions and pilosebaceous abnormalities. Type II photoaging refers to dermal remodelling resulting in rhytides formation. Type III photoaging refers to subcutaneous, muscle or bone components which include lipoatrophy, severe rhytides, muscle or bone atrophy. The strategies for rejuvenation will target on cell protection, cell turnover, cell stimulation, tissue tightening and volume repletion by different

modalities of treatment. Combining topical treatments consisting of pigment-reducing agents and epidermal turnover agents can have a synergistic effect for epidermal rejuvenation. Aurora (pulsed light and RF) can improve type I photoaged skin by delivering light energy at a level safe for all skin types and incorporating a cooling system to create temperature distribution for optimal RF effect. For dermal rejuvenation in type II photoaged skin, a study showed that there was 40-60% improvement in wrinkles after Polaris WR (diode laser and RF) treatment. This improvement was gradual and might take six to twelve weeks to show its effect. For type III rejuvenation, VelaSmooth (infrared laser and RF) was shown to improve tissue tightening.

In the second session, the speaker talked about the advances in leg veins treatment, using RF combined with diode laser. In one of the speaker's studies of the safety and effectiveness of the Polaris LV system, which was based on combined RF and diode laser (915 nm), in treating leg veins, fifty women (Fitzpatrick II-IV) with red or blue leg veins (1-4 mm in diameter) were treated with the machine, using a laser fluence of 60-80 J/cm² and conducted RF energy of 100 J/cm². Patients received up to three treatment sessions at 2- to 4-week intervals. The results showed that 75% of patients demonstrated at least 50% vessel clearance, and about 30% of patients had 75-100% vessel clearance. Histologic assessment

showed signs of coagulation and prominent endothelial degeneration in all treated vessels, but the epidermis remained normal. There were minimal complications. The speaker concluded that Polaris LV was effective and safe in treating red and blue leg veins up to 4 mm in diameter.

The third session focused on the treatment of cellulite. Comparing to older methods including topical therapy, systemic therapy, massage and liposuction, the newer modalities such as VelaSmooth make use of the concept of re-contouring skin surface by increasing controlled metabolism of adipose tissue. The mechanism of actions include increased adipose tissue metabolism, increased blood supply by decreasing local atmospheric pressure using vacuum suction pressure, increased intracellular oxygen diffusion, mechanical break down of connective tissue bonds, and redistribution of adipose content. A two-center study investigated the safety and effectiveness of combined energies for cellulite treatment using the VelaSmooth system. Thirty-five female subjects with cellulite and/or skin irregularities on the thighs and/or buttocks were treated with the VelaSmooth device. Patients received 8 to 16

treatments twice weekly. All study patients showed some level of reduction in thigh circumference after eight weeks of treatment. Seventy percent of patients showed such a reduction after four weeks of treatment. All patients showed some level of improvement in skin texture and cellulite. The mean decrease in circumference was 0.8 inches. However, there are still controversies on the mechanism of action, histological effect on adipocytes, longevity and efficacy, and synergistic effect with adjuvant use of other modalities of treatment. Further studies are needed to better define the mechanisms by which RF and light energies affect subdermal tissues and develop a method of quantified cellulite analysis.

Learning points:

A structural approach to non-ablative rejuvenation by classification of the problems of photoaging is important prior to selection of treatment modalities. A combination of radiofrequency and optical energy is a new treatment option for non-ablative rejuvenation, leg veins and cellulite.