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Highly effective Anti-Aging program with novel Transmesodermic Therapy System

Jean Luc Levy (MD, Centre Laser Dermatologique, Marseille, France) who has been involved in a clinical multi-centre study on the novel approach to electrophoresis assisted anti-aging treatment is excited about the results of the Transmesodermic Therapy System TMT® (TMT Systems, Barcelona, Spain). E-ABG correspondent Birgit Hansen has met him at the annual EADV meeting in Vienna, where these results were presented to the attending experts, for an interview.

EABG: Jean-Luc, what are the mechanisms of action in Transmesodermic Therapy ?

LEVY: To allow topically used pharmacological substances better and deeper penetration into the skin it is important to effectively overcome the skin barrier function. One strategy is electrically assisted ionto- or electrophoresis. In iontophoresis of the skin short electric field pulses create aqueous pathways into the stratum corneum that recover immediately. The simultaneous deposition of energy that is heating the epidermis produces skin lipid alteration that recovers with time. The electrical impact on the cells modifies the cells' membranes and the intercellular spaces, and the ultramicropores increase the permeability of the cells for ionized and non-ionized substances.

EABG: So the TMT® system functions as vehicle for the infiltration of anti-aging effective substances. Which substances are used in conjunction?

LEVY: The TMT® System acts as carrier of Mesogel and Mesolift, each with 4 active ingredients that are known for their effectiveness in the treatment of skin aging. Mesogel contains Acetilhexapeptido-3, a biosynthetic polypeptide that reduces deep wrinkles, increases skin softness and extinguishes fine lines. The tensor is a water soluble hydrolysis of wheat gluten which has a tautening and moisturizing effect. Ascorbic Acid has a high anti-oxidant capacity and the Hyaluronic Acid acts as healing, firming and regenerative agent with excellent moisturizing properties. Mesogel contains Organic Silicon that intervenes in metabolic regulation and cellular division, and L-Carnitine which acts as catalyser for oxidising fatty acids, preventing them from forming triglycerides. Further ingredients are Glucosamin for the maintenance of the dermal structure, and Tioctic Alpha Lipoic Acid for elevated anti-oxidant action.

EABG: How exactly are the drugs delivered into the skin? And how do you measure the effectiveness of this electrically assisted delivery?

LEVY: This is done by a "roll-on" electrode. The design of this electrode is vital for the effective drug delivery and very good tolerance for voltage without risk of skin burning. In our study we investigated the permeation of the molecule sodium ascorbyl phosphate (SAP) (action: anti-stretch, anti-aging, anti-flaccidity) and quantification of SAP amounts in the skin following active TMT® treatment compared to a control side that was passively exposed to the same substance. The protocol was 20 min TMT® treatment using a free program at negative polarity (level 5 with 30% of the maximum power) and the control side with 20 min under passive conditions. Using fluorescent laser scanning confocal microscopy (LSCM) the conclusion was: A 20 min TMT® System treatment resulted in a 7-fold increase of the

cumulative amount of sodium ascorbyl phosphate in the skin. LSCM studies with calcein demonstrated that TMT® System treatment increased skin permeability as shown by the presence of fluorescence at deeper levels in the skin. In summary, it is a highly effective method to increase delivery of charged molecules into the skin.