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A Pilot Study Using Reflectance Confocal Microscopy (RCM) in the Assessment of a Novel Formulation for the Treatment of Melasma

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ABSTRACT

INTRODUCTION: Melasma is a common pigmentary disorder caused by abnormal melanin deposits within the skin. Hydroquinone (HQ) is presently the most popular depigmenting agent, however the treatment of melasma remains unsatisfactory, resulting in a need to evaluate new depigmenting agents.

OBJECTIVE: The objective of this study was to assess, using standard methods and a novel technique, in vivo Reflectance Confocal Microscopy (RCM), the efficacy and safety of a new non-HQ bleaching agent Dermamelan® (Mesoestetic, Barcelona, Spain) in the treatment of melasma.

METHODS: Ten women with melasma were enrolled in an open-label trial lasting four months.

Patients were of Fitzpatrick skin types II-IV. A non-HQ depigmenting agent (Dermamelan) was applied once-daily for three months.

Melasma Area and Severity Indices (MASI) were measured. Standard and UV-light photographs were taken and in vivo RCM, which detects pigmentary changes at a cellular level, was done.

Evaluations were performed before treatment, on the first, second and third month of treatment and one month after treatment.

Upon cessation of the trial, patients completed a questionnaire regarding efficacy and tolerance.

RESULTS: At baseline, RCM detected hyperpigmented keratinocytes in all patients, dendritic cells in 2/10 patients, and melanophages in 2/10 patients.

Based on the MASI score, Dermamelan treatment improved melasma by 50 percent. This was confirmed

by standard and UV-light photography.

Maximum therapeutic effect was usually reached by one month of treatment and was maintained at one month following its completion.

Interestingly Dermamelan treatment also induced a statistically significant decrease of pigmented epidermal keratinocytes as detected by RCM.

Patients with melanophages on RCM at baseline had a poorer outcome, but not those with dendritic cells.

Mild irritation was the only adverse event observed during treatment. The majority of patients were satisfied with the result.

CONCLUSION: This study suggests that Dermamelan produces significant rapid improvement of melasma at a clinical and cellular level and demonstrates the potential of RCM to monitor and possibly predict efficacy of a new depigmenting agent in the treatment of melasma.