A RANDOMIZED COMPARATIVE STUDY ON MELASMA DURING SUMMER WITH A VISIBLE LIGHT-PROTECTED TINTED SUNSCREEN VERSUS A STANDARD NON-TINTED SUNSCREEN

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INTRODUCTION

Melasma is a common hyperpigmentation skin disorder, characterized by relapse due to sun exposure. Ultraviolet (UV) radiation is the main cause of skin pigmentation, but more recently visible light has been shown to be an important contributor. Therefore, sunscreens against UVA, UVB and visible light are key in melasma prevention, but few comparative studies have been conducted. The study aim is to compare a sunscreen containing photoprotection against visible light (tinted product) to a non-tinted sunscreen in the prevention of melasma relapse, using instrumental and clinical measurement.

MATERIALS & METHODS

In a single-center, randomized, investigator-blinded clinical study, 42 melasma women (mean age 39.5 years old) were included during summer with type III (93%) and IV (7%) phototypes. Divided into two groups, they applied on the whole face at least twice daily either the tinted sunscreen (SPF50+, UVA index 38, visible-light protection factor 66%) or the same sunscreen but non-tinted. At 3 visits (day [D]1, T2.5 months and T5 months), melasma was assessed by colorimetric measurements using the ITA° angle (which includes the L* and b* parameters) to evaluate skin pigmentation, L parameter for lightness and ΔE calculation (which includes the L*, b* and a* values) for the color homogeneity, in comparison with the surrounding area. Moreover, melasma was clinically evaluated using the mMASI (modified Melasma Area and Severity Index). The tolerance evaluation of the two sunscreens and the subjective efficacy were also performed at the end of the study.

RESULTS

Figure 1: The application of the tinted sunscreen showed a significant reduction in the mMASI score of **12.5%*** ** (3.5 vs. 4 at D1) after 5 months. No significant differences were however observed between the two products.

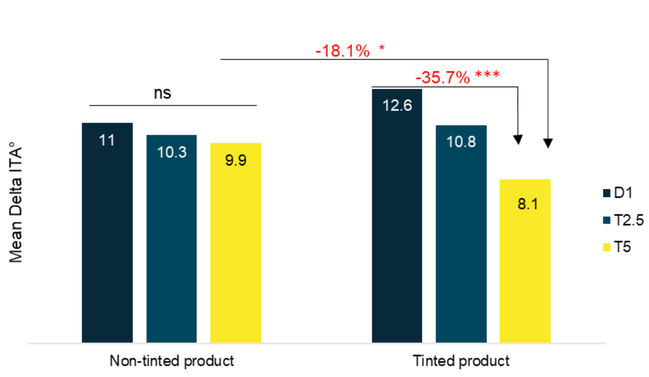

Figure 2: *Mean of ΔITA° (skin pigmentation):* difference between melasma and the surrounding area showed a **significant improvement** in the tinted sunscreen group when compared to the non tinted group and when compared to day 1.

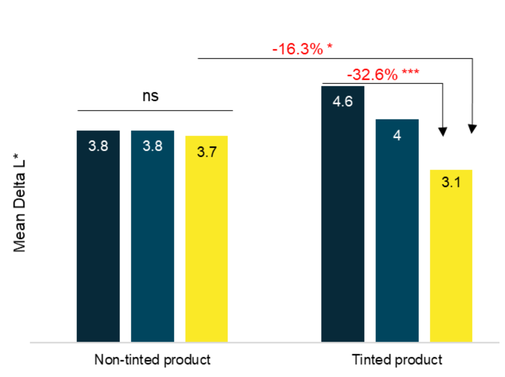

Figure 3: *Mean of ΔL* (skin lightness):* difference between melasma and the surrounding area showed a **significant improvement** in the tinted sunscreen group when compared to the non tinted group and when compared to day 1.

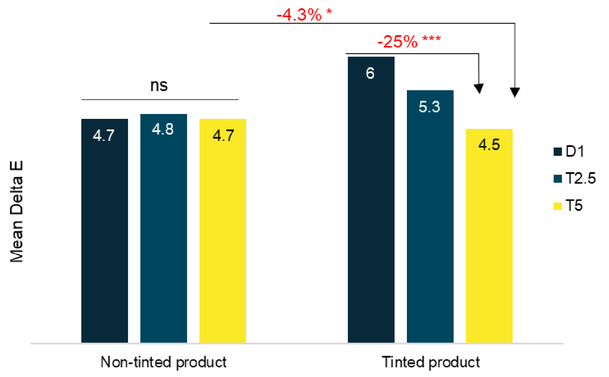

Figure 4: *Mean of ΔE parameter (skin homogeneity):* difference between melasma and the surrounding area showed a **significant improvement** in the tinted sunscreen group when compared to the non tinted group and when compared to day 1.

Both sunscreens showed very good tolerance.

**p<0.05 between groups, Student's t test, ***: p<0.001 compared to D1, Dunnett adjustment*

CONCLUSION

This study showed that even in summer, the use of a sunscreen with very high UVB and UVA photoprotection reduces melasma severity, and more interestingly, the addition of visible light protection via an adapted tinted in sunscreen significantly further improves the performance on melasma management.

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