New IPL technology as treatment for melasma

Background

Melasma is an acquired refractory pigmented skin disease. It is a complex multifactorial disorder and its pathogenesis has not yet been fully elucidated. Risk factors include genetic predisposition, sun exposure, stress, medications, and pregnancy. Melasma is divided into three types: epidermal, dermal, and mixed melasma. In each there are increased amounts of melanin, melanocytes, and melanosomes. In addition to increased superficial and / or deep pigmentation, increased vascularity is often present. Combination therapy involving light and topical therapy is the preferred mode of treatment for the synergism and reduction of untoward effects. As long-term topical therapy is often required to manage recurrences, patient compliance can become an issue due to disappointing results. The solution is a treatment providing a quick improvement of melasma resulting in patient's immediate satisfaction, which then promotes a long-term compliance for topical treatment to maintain the improvement.

Intense pulsed light (IPL) is a broad wavelength light source that can target a wide range of cutaneous structures, including deeper pigmentation and increased vasculature. It also has a lower incidence of side-effects compared to other devices. The Candela Selective Waveband Technology (SWT®), used on Nordlys™ system, is a new and unique technology, defined by a patented dual filter, as well as sub-millisecond pulses. The dual filter permits filtering light more effectively, removing the lower and the higher wavelengths and concentrating emitted energy in a defined range. This feature ensures more effective and safer treatment. Due to the dual filter, the use of SWT® with the 555nm filter on melasma patient ensures greater results on the pigment component compared to what other IPL systems could do.

Case report

A 43-year-old Caucasian female presented with a history of several years of facial melasma, previously managed by topical treatments (Figure 1). Wood's lamp examination revealed mixed melasma with a significant epidermal component. The patient was treated with Candela SWT® on Nordlys using a 555nm filter and a double-pulse technique with 4.5ms pulse duration, 10ms delay, and a fluence of 12J/cm^2. The patient was followed up 30 days after the IPL treatment: clinical improvement was excellent and she was pleased with the results (Figure 2). Maintenance treatment with depigmenting cream and sunscreen high in minerals was then prescribed. Follow-up visits were performed every month for one year after the initial SWT® session. The patient's condition continued to improve and she hasn't had any problems adhering to her daily topical treatment regime (Figure 3).

Figure 1.

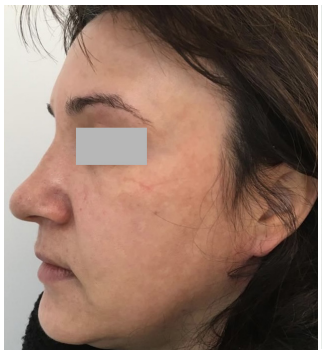

Figure 2.

Figure 3.

Discussion

Dyschromia is a leading cause for cosmetic consultations. Melasma is a kind of dyschromia that is very difficult to treat due to the complex pathogenesis and frequency of recurrence. A review of the literature suggests that laser and light source treatments can often result in rebound hyperpigmentation, relapse, and darkening of melasma [1-4]. Thus, topical therapy between light-based treatments is essential to control any relapses. Topical therapy, however, requires adherence and persistence if it is to be effective. Patients' compliance is often compromised due to disappointing results. The ideal situation is a light treatment inducing a quick improvement of the melasma which achieves patient satisfaction and encourages compliance with subsequent topical treatment. IPL is a noncoherent filtered flashlamp light source, emitting light between 515 and 1200nm. Filters allow for selective photothermolysis of chromophores, including melanin and haemoglobin. With the patented dual filter, the Candela SWT® on Nordlys permits selecting light more efficiently, directing all the energy on the selected target. This innovative technology complies exactly with our strict requirements of managing melasma: just one session with the 555 filter allows for a quick and successful result as demonstrated in this case.

Conclusion

Well-designed, controlled treatment is needed to tackle the challenging management of melasma. The results obtained in our patient's case, using just a single SWT® session, were crucial in ensuring the patient's adherence to long-term topical treatment. Follow-up after a year post one SWT® treatment showed persistent and additional improvement of the clinical status.

References

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