Laser therapy in melasma

Melasma therapy is so challenging and relapses are so frequent that we need different treatment modalities like lasers. Although lasers facilitate our therapy, they should be used cautiously, since they can also enhance melasma causing postinflammatory hyperpigmentation. Since melasma can be both epidermal and dermal and also can have vascular component, we need different wavelengths so that we can achieve good results. Melasma is a chronic and relapsing hyperpigmentation mostly of the face but sometimes of the neck, chest and forearms. Melasma occurs frequently during pregnancy and menopause when there is hormonal alterations and also using birth control pills has a strong association with melasma. Since there is no definite etiology for melasma, treatment is a challenge for most of the dermatologists. Melasma is classified by both location and depth of involvement. Based on the location the three most common types of melasma are centrofacial, malar and mandibular. If we consider the depth of melasma, it could be epidermal, dermal, mixed or intermediate. By the help of the Wood's lamp, we can distinguish these entities.

Besides using topical medication such as "Kligman's formula", azelaic acid, retinoic acid, arbutin, kojic acid, there are different laser and light based devices to use in the treatment of melasma. The five board categories of laser and light therapy include intense pulsed light (IPL), Q-switched lasers, picosecond lasers, ablative and nonablative fractionated resurfacing lasers (NAFL) and vascular lasers. IPL therapy has a potential advantage over laser therapy, because it uses a spectrum of wavelengths that allow for the penetration of various levels of the skin and target both epidermal and dermal melasma simultaneously. Studies done by low fluence Q switched Nd:Yag lasers show that they are effective in dermal type of melasma and are safe to treat patients with melasma. However the recurrence rates suggest poor long-term results when the laser is used as monotherapy. NAFLs utilize midinfrared wavelengths that bypass the epidermis and penetrate from the dermal-epidermal junction to the midreticular dermis to induce neocollagenesis and remodeling. This facilitates the removal of dermal melanophages. No matter which treatment is used there is always a risk of recurrence of melasma. The longest delay seems to be with NAFL treatments.

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Figure 1: Mechanistic Overview of Melasma Pathology and the Effects of Topical and Laser/Light/Device Procedures
Recent Publications


Biography

Dr. Aslı Eralp has graduated from Hacettepe Medical University in Ankara in 1993. In 1997 she finished her dermatology training and started to work in a government hospital as a dermatologist. In 1998 she started to deal with cosmetic procedures. In 2004 she opened her private clinic. As well as patients with dermatological illnesses, she has been treating patients with hyperpigmentation, different kinds of scars, vascular lesions such as port wine stains, hemangiomas. She has experience in using different kinds of lasers such as fractional CO2 lasers, Q switched Nd:YAG, Thulium and vascular lasers and also fractionated microneedle radiofrequency. Further more she has been training her colleagues about antiaging treatments such as chemical peeling, mesotherapy, Botox, fillers and thread lifting for more than 10 years. Recently she had a lecture about fractionated microneedle radiofrequency in 2nd International Dermatology and Cosmetology Congress 2017 in Istanbul.

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