Q-switched Nd:YAG laser versus trichloroacetic acid peeling in treatment of melasma among Egyptian patients

Alaa E. A. Moubasher, Eman M. K. Youssef, and Doaa A. E. Abou-Taleb

Abstract:

Introduction: Melasma is a common disorder of facial hyperpigmentation that is often difficult to treat and resistant to all treatment modalities and is therefore very frustrating to patients and dermatologists. Objective: Our purpose was to evaluate the efficacy of trichloroacetic acid (TCA) peeling in comparison to double frequency Q-switched (Nd:YAG) laser (1064 nm and 532 nm wavelengths) in treatment of melasma among Egyptian patients. Patients and Methods: A total of 65 adult Egyptian female patients with melasma (age > 18 years old, skin phototypes type III-V) were enrolled in this study. Wood's light was used for classification of the type of melasma into epidermal, dermal or mixed. The patients were divided into 4 groups: Group 1: Fifteen patients with epidermal melasma were treated with TCA (20%). Group 2: Twenty patients with epidermal, dermal and mixed melasma were treated with TCA (25%). Group 3: Fifteen patients with dermal and mixed melasma were treated with TCA (30%). TCA peeling was performed every 2 weeks up to 8 sessions. Group 4: Fifteen patients were treated with double frequency Q-switched Nd:YAG laser, of whom 7 with epidermal melasma were treated with (532 nm), and 8 with dermal and mixed melasma were treated with (1064 nm). Laser treatment was performed every month up to 6 sessions. The end point of treatment for all patients was the clearance of melasma or occurrence of complications. Melasma area and severity index (MASI) score was used before and after treatment to assess the severity of melasma and evaluate the response of treatment. All patients were followed up monthly for up to 3 months after the end of treatment for possible recurrence. Results: The mean of improvement percentage of MASI score was significantly higher among group 2 treated with TCA 25% compared with other groups (p=0.000***). The epidermal type of melasma was significantly improved compared with the dermal type (p=0.0029***). Group 4 treated with Q-switched Nd:YAG laser (532 nm & 1064 nm) showed the highest complications of post-inflammatory hyperpigmentation (53.3%) compared with other groups. The recurrence of melasma was (32%) among all treated patients. Conclusions: Our findings suggest that TCA peeling is effective in treatment of melasma, TCA 25% was the most effective concentration with rare side effects. Double frequency Q-switched Nd:YAG laser (532 & 1064 nm) is not recommended in treatment of melasma because it was associated with the highest incidence of complications. In our community, the hot climate, the exposure to sunlight and the dark skin types are factors that interfere with the permanent cure of melasma. Therefore, avoidance of sun and heat exposure and the regular use of broad-spectrum sunscreens are essential for melasma patients.

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