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Long-pulsed Nd:YAG 1064 nm laser safe and effective in the treatment of onychomycosis

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Statement of the problem: Onychomycosis is both a cosmetic and medical problem and its systemic treatment have many limitations. The aim of this clinical study was to explore and evaluate the use of long-pulsed Nd:YAG laser 1064nm (Candela, Wayland, MA, USA) in the treatment of onychomycosis.

Methodology: Twenty Egyptian patients (18-60 years old) with 65 nails affected by onychomycosis were recruited consecutively from the Dermatology Outpatient Clinic, Ain-Shams University Hospitals over a period of 6 months. We excluded patients on topical or systemic anti-fungal therapy in the preceding 6 months, permanent or semi-permanent discoloration of the nail plate, any generalized skin disease, immunosuppressed patients and pregnant patients. Mycological examination of nail scrapings by direct KOH (20%) and culture was done together with photographing the nails before, one month and 3 months after treatment. Each patient received 4 laser sessions spaced 1 week apart. We used a fluence of 50J/cm², pulse duration of 30 ms, spot size 3 mm and the cryo-spray was switched off. The nail plate was fully covered with laser irradiation 3 times in each session.

Findings: Distal and lateral subungual onychomycosis was the commonest clinical type (85%) and yeasts represented 90% of the isolated fungi. After one month, 15 (75%) patients turned mycologically negative while 5 (25%) remained positive. However, 3 out of the 5 mycologically positive patients turned negative at the 3 months follow-up visit. This means that 90% of the patients and 52 (80%) of the nails achieved mycological clearance. Only mild pain was reported by all patients during and shortly after the sessions.

Conclusion: Long-pulsed Nd:YAG 1064 nm is a safe and effective treatment for single and multiple finger or toe nail onychomycosis.

Biography

Mary F Matta has been working in the Dermatology and Venereology department of Ain-Shams University Hospitals since 2001 and has always shown great interest in using different lasers for treating skin problems. She has a great talent in communicating with patients and knowing their social and medical problems. She is In-charge of the Psoriasis Clinic. She has supervised a lot of researches and has published some of her work.

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