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Clinical Research and Clinical Reports

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Review Article

Treatment of onychomycosis with 1064 nm Nd: YAG LASER: preliminary observations

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Received Date: 23 November 2024 **Accepted Date**: 07 December 2024 **Published Date**: December 25, 2024.

Citation: Cesar Bimbi, (2024), Treatment of Onychomycosis with 1064 nm Nd: YAG LASER: Preliminary Observations, *Clinical Research and Clinical Reports,* 6(2); **DOI:**10.31579/2835-8325/050

Abstract

The use of the 1064nm Nd: YAG laser is an emerging option for the treatment of onychomycosis and there are studies, most of which show a high mycological cure rate and good safety. The results seem to be operator-dependent.

Key words: laser; patients

Introduction

Onychomycosis is one of the most common pathologies of nails, with an estimated prevalence of 2 to 8%. Oral antifungals have shown good response, but due to prolonged treatment (terbinafine: continuous cycle of 12 weeks, 250 mg/day), they carry a high potential for systemic effects, leading to patient non-adherence due to fear of these adverse events [1].

The use of the 1064nm Nd: YAG laser is an emerging option for the treatment of onychomycosis and there are studies, most of which show a high mycological cure rate and good safety. The results seem to be operator-dependent.

Some studies have evaluated the in vitro growth of Trichophyton rubrum using 1064 Nd: YAG lasers showing that energy at this wavelength passes through the nail plate and superheats the mycotic material, leading to fungal cell damage and death.

This modality can be successfully used for the treatment and cure of onychomycosis. We work in a private clinic and for less than one year we have been carrying out standardized Nd: YAG1064nm spot size 6 mm, pulse time 40 ms, fluency 50-80 J/cm² applications *(Etherea® Industra Technologies-Br platform)*; intervals of 6 weeks. We recommend that patients always use miconazole ointments on their feet, in order to avoid recurrences due to the migration of fungi from the interdigital or plantar surfaces to the nails again.

The first observations are quite positive and will be demonstrated in this random series of cases below, while we prepare a more scientific observation. Several patients who, in addition to the LASER, had undergone very recent treatments with systemic antimycotics were excluded from the preliminary observation. 2 patients did not respond to the applications.

Patients' habits must be controlled: guidelines to avoid removing cuticles, avoiding humidity (there were patients soaking their feet), avoiding pedicures and tight shoes were sent to patients regularly.

In our experience, no patient withdrew from treatment due to discomfort. Most feel bearable heat or burning sensation and application lasts about 5 minutes per nail.

Photographic observations of the results were made within a minimum of 3 months are below.


Nd:Yag1064nm/spotS6mm,40ms,68


Candida sp , 2 sessions


PSEUDOMONAS , 2 LASER SESSIONS


Tricophytum rubrum 2 sessions


PSEUDOMONAS 2 SESSIONS


Tricophytum rubrum 1 session


Tricophytum rubrum, 1 session


Candida spp 1session

References

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