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27 | Diagnosis and treatment monitoring of toenail onychomycosis by reflectance confocal microscopy: Prospective cohort study in 58 patients.

Pharaon M, Gari-Toussaint M, Khemis A, Zorzi K, Petit L, Martel P, Baran R, Ortonne JP, Passeron T, Lacour JP, Bahadoran P; J Am Acad Dermatol. 2014 Apr 28. pii: S0190-9622(14)01137-2. doi: 10.1016/j.jaad.2014.02.020.

ABSTRACT

BACKGROUND: The clinical presentation of onychomycosis is often nonspecific and can lead to inappropriate antifungal therapy. Available mycologic tests share many drawbacks. **OBJECTIVE:** We sought to evaluate the accuracy of reflectance confocal microscopy (RCM) for the diagnosis of onychomycosis compared with standard mycologic tests.

METHODS: In all, 58 patients with suspected onychomycosis were enrolled prospectively. RCM, potassium hydroxide preparation, and fungal culture were performed at baseline and after treatment in patients with confirmed onychomycosis. RCM diagnosis of onychomycosis was based on the presence of filamentous and/or roundish structures in the nail plate, corresponding respectively to septate hyphae and/or arthroconidia.

RESULTS: Of patients, 46 of 58 were correctly classified by RCM, with a diagnosis yield of 79.3%, sensitivity of 52.9%, specificity of 90.2%, positive predictive value of 69.2%, and negative predictive value of 82.2%. The use of a handheld RCM imager permitted a faster examination with the same accuracy. RCM performed after treatment in 9 patients showed a normal nail plate, and healing was confirmed by mycologic tests or by follow-up.

LIMITATIONS: Existing RCM scanner heads are not intended for nail examination.

CONCLUSION: RCM has excellent specificity and can be used as a rapid, office-based test to strengthen the prescription of antifungal therapy and for follow-up. Technical improvement could aid sensitivity.