

## **Clinical diagnosis of toenail onychomycosis is possible in some patients: cross sectional diagnostic study and development of a diagnostic rule.**

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**Background:** Suspected toenail onychomycosis is a frequent problem. Clinical diagnosis has been considered inadequate.

**Objectives:** To assess diagnostic accuracy of clinical findings for detecting fungi in toenails, and to develop and validate a clinical diagnostic rule aimed at improving dermatologists' diagnosis of onychomycosis.

**Patients / Methods:** Cross sectional diagnostic study. 277 patients seen by 12 dermatologists. Gold standard was presence of dermatophytes on culture or positive nail plate biopsy. For each sign we described prevalence, sensitivity, specificity, positive and negative predictive values, and likelihood ratios for positive and negative results. We developed a diagnostic clinical rule and validated it in a sub-sample.

**Results:** Helpful findings to predict presence of fungi are: previous diagnosis of fungal disease, abnormal plantar desquamation (affecting more than 25% of the sole), onychomycosis considered the most probable diagnosis by a dermatologist, and presence of interdigital tinea. When dermatologists consider onychomycosis the most probable diagnosis and plantar desquamation is present (13% of patients), positive predictive value for presence of fungi is 81%. When both signs are absent (34% of patients), positive predictive value for absence of fungi is 71%. In other situations, clinical diagnosis might not give enough information to decide on therapy.

**Conclusions:** In 13% of the patients (a large number in absolute terms), when dermatologists consider onychomycosis the most probable diagnosis and plantar desquamation is present, therapy should be started without any further test, as clinical diagnosis is at least as accurate as laboratory tests. In other situations, an optimal management strategy should be defined.