**Objectives**:

Onychomycosis is a nail infection caused by a variety of fungal species including yeasts, filamentous fungi and dermatophytes, in this last case, onychomycosis is known as tinea unguium. Diagnosis and treatment of nail infection represents a challenge for both the lab and the clinician. In the first case, because the etiological agents are also common environmental contaminants in the lab and distinguishing true infection from contamination is difficult. In the second, because treating nail infection requires prolonged therapy with suboptimal drugs, which in the last term produces a poor outcome with a high failure rate. Lack of guidelines to treat superficial nail infections caused by infrequent filamentous fungi makes the decision-making worse as uncertainty is the standard.

To perform a retrospective epidemiological analysis of mycological culture results of nail samples analysed in Hospital Clinico Lozano Blesa, Zaragoza (Spain) between 2020-2023 to describe local trends in nail fungal infection and improve diagnostic algorithm.

**Materials & Methods:**

Culture results were obtained from the Laboratory Information System. The following variables were studied using SPSS and Excel: patient’s age and gender, petitioner clinical setting, year, sample, result, species.

**Results**:

2,337 nail specimens were analysed using mycology standard procedures from 1.909 patients. Of those, 67.8% were from women and 70.5% from patients over 45 years old. 66% of cultures were negative, 12.8% (n=299) isolated dermatophytes, 14.7% (n=343) identified other fungi (yeasts or filamentous fungi) and 6.7% (n=156) showed contamination. The most prevalent dermatophytes were *T. rubrum* (n=235) and *T. interdigitale* (n=32) representing 89% of all dermatophyte isolates. Among filamentous fungi (n=125), *Fusarium sp* (n=33) and *Aspergillus terreus* (n=32) were the most frequent isolates, followed by *Scopulariopsis brevicaulis* (n=17) and *Aspergillus versicolor* (n=12). Other infrequently isolated fungi were: *Aspergillus sp flavus, niger, nidulans* among others), *Sarocladium spp, Acremonium spp* and *A. kalrae*.

Yeasts were isolated in 218 samples, identifying *Candida parapsilopsis complex* in 67% of yeast positive cultures (n=147) and *C. albicans* in 10% of the cases (n=22). The remaining yeast positive cultures identified a broad variety of infrequent and rare yeast species including *M. guilliermondii, M. ruber, C. lusitaniae, Trichosporon, Malassezia,* etc)

**Conclusions**:

This study provides an updated picture of local epidemiology of fungal infection in nail samples. Dermatophytes, especially *T. rubrum* becomes the main cause of onychomycosis in our area. Other frequent fungi isolated are *A, terreus* and *Fusarium sp,* both being difficult to treat fungi, because of their intrinsic resistance profile.