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Epidemiologic characteristics and risk factor identification in patients with suspected onychomycosis

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Background: Onychomycosis is a fungal infection of the fingernails and/or toenails, caused by dermatophytes, yeast and non-dermatophyte moulds. The epidemiology of onychomycosis in Serbia is yet to be fully established.

Objectives: This epidemiological study was aimed at evaluating the epidemiology of onychomycosis in a sample of the Serbian patients at risk of onychomycosis, to determine the fungal aetiological agents and to identify the possible risk factors.

Patients & Methods: The study population included 374 patients from six centers in Serbia with suspected onychomycosis. Demographic data, data about comorbidities, lifestyle, clinical aspects of onychomycosis, trauma, excessive perspiration, and personal and family history of previous onychomycosis were studied. Laboratory confirmation of diagnosis was done by direct microscopy, fungal culture and PCR.

Results: Diagnosis of onychomycosis was confirmed in 50.8% of patients, who tested positive to at least one laboratory test (direct microscopy, fungal culture or PCR). *T. rubrum* was predominant both on toenails (85.98%) and on fingernails (38.46%). Independent risk factors for onychomycosis were: old age (OR=2.285; p<0.001), family history of previous onychomycosis and/or tinea pedis (OR=2.452; p=0.005), excessive perspiration (OR=2.165; p=0.002), and higher degree of hyperkeratosis (OR=1.755; p=0.020).

Conclusions: Identification of the most common causative agents of onychomycosis revealed the predominance of dermatophytes and may be useful in discerning the epidemiological situation and planning preventive strategies. A significant contribution is insight in the importance of certain conventional and methods of molecular biology in the diagnosis of onychomycosis since that for the first time in Serbia molecular diagnosis was used in laboratory confirmation. These results could help in defining the optimal laboratory protocols for reliably identification of onychomycosis suitable to our local epidemiology and the economic situation.

Biography

Eleonora Dubljanin is working as an Teaching Assistant at the Institute of Microbiology and Immunology, Faculty of Medicine at the University of Belgrade, Serbia. She completed her Magister degree in the field of Clinical and Experimental Bacteriology and got her Doctoral degree in Epidemiology from the Faculty of Medicine University of Belgrade, Serbia. She is mainly involved in research and teaching in medical microbiology, particularly in the field of fungal and parasitic human infections. She has published more than 10 papers in international scientific journals. Her research interests are medical microbiology, dermatology, laboratory diagnosis and onychomycosis.

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