Aspergillus species: An emerging pathogen in onychomycosis among diabetics


Department of Microbiology, Faculty of Medical Sciences, University of Sri Jayewardenepura, Gangodawila, Nugegoda, Diabetic Clinic, Colombo South Teaching Hospital, Kalubowila, Tan-Galle Base Hospital, Tangalle, Hambantota, Sri Lanka

ABSTRACT

Introduction: Approximately, 33% patients with diabetes are afflicted with onychomycosis. In the past, nondermatophyte molds have been regarded as opportunistic pathogens; recently, Aspergillus species are considered as emerging pathogens of toenail infections. In Sri Lanka, the prevalence of Aspergillus species in onychomycosis among diabetics is not well documented. Objective: To determine the proportion of Aspergillus onychomycosis, risk factors and knowledge among diabetics. Materials and Methods: This was descriptive cross-sectional study. Three hundred diabetic patients were included. Clinical examinations of patients’ toenails were performed by a clinical microbiologist. Laboratory identification was done, and pathogens were identified to the species level by morpho-physiological methods. All inferential statistics were tested at $P < 0.05$. Results: Among clinically suspected patients, 85% (255/300) were mycologically confirmed to have onychomycosis. Aspergillus species were most commonly isolated $n = 180$ (71%) followed by dermatophytes, yeasts, and other molds $n = 75$ (29%). Of the patients having Aspergillus onychomycosis, 149 (83%) were in the >50 age group. In men, Aspergillus onychomycosis was seen in 82%. Among patients who had Aspergillus nail infection, 114 (63%) had diabetes for a period of >15 years. Among patients who were engaged in agricultural activities, 77% were confirmed to have infected nails due to Aspergillus species. Conclusion: Aspergillus niger was the most common pathogen isolated from toenail infection. Aspergillus species should be considered as an important pathogen in toenail onychomycosis in diabetic patients. Risk factors associated with Aspergillus onychomycosis were age, gender, duration of diabetes, length of exposure to fungi, and occupation.

Key words: Aspergillus species, diabetics, onychomycosis, Sri Lanka