P228

A 3-year survey of dermatophytosis in Belgium

R. Sacheli,[1] R. Darfouf,[1] S. Pateet,[2] H. Graide,[1] C. Adjetey,[1] K. Lagrou[3] and M. P. Hayette[1]

[1]CHU Liège, Liège, Belgium; [2]University Hospitals Leuven, Leuven, Belgium and [3]UZ Leuven, Leuven, Belgium

Objectives Dermatophytosis refers to superficial fungal infections of keratinized tissues caused by keratinophilic dermatophytes. They are the most common cause of superficial fungal infections worldwide. Epidemiological studies regarding dermatophyte infections have been conducted in several countries and differences in the incidence and in etiological agents have been reported for different geographical areas. That is why national surveillance of circulating strains causing dermatophytosis is crucial. The Belgian National Reference Center (NRC) for Mycoses conducted a survey on dermatophytes strains circulating from 2012 to 2014. The present study was performed to assess the profile of dermatophytosis and to identify the species involved.
Methods The Belgian NRC for Mycosis collected 9138 strains between January 2012 and December 2014. The isolates were cultured from patients clinically suspected for fungal infections of skin, hair and nails. Isolates were sent by Belgian laboratories to the two labs of the Belgian NRC (UZ Leuven and CHU of Liège) in order to identify the fungus or to confirm the identification. All isolates cultured from patients of UZ Leuven and CHU of Liège were also included. Fungal identification was performed by microscopy after subculture and in case of doubtful identifications, by ITS sequencing.
Results Among the 9138 samples, 3587 were identified as dermatophytes. *Trichophyton. rubrum* (*T. rubrum*) was the most prevalent species accounting for 56 17% ($n = 2015$) of the infections from all sources, followed by *T. mentagrophytes complex* (2183%, $n = 783$). The other main etiological agents of dermatophytosis recorded in this study in descending order of prevalence were *M. audouinii* ($n = 303$), *M. canis* ($n = 120$), *T. violaceum* ($n = 112$), *T. tonsurans* ($n = 95$), *T. soudanense* ($n = 66$), *M. praecox* ($n = 59$) and *E. floccosum* ($n = 14$) Our data also reveal the predominance of anthropophilic species causing tinea capitis especially *M. audouinii* responsible for 36 49% ($n = 163/448$) of hair/scalp infection. *Trichophyton violaceum*, rarely observed in our country, is increasing in frequency these last years as 12.8% ($n = 57$) of the reported cases of tinea capitis are due to this species. The retrospective evaluation of data collected also shows that zoophilic strains as *M. canis* well represented in the past epidemiology of tinea capitis, is decreasing in frequency accounting for only 7.2% ($n = 32$) of clinical cases. Finally, our data confirm the high prevalence of *T. rubrum* commonly observed in Europe as causal agent of onychomycosis (70.9%, $n = 1603$) followed by *T. mentagrophytes complex* (20.9%, $n = 455$). *T. rubrum* and *T. mentagrophytes complex* are also responsible for the majority of skin infections as they represent respectively 40% ($n = 386$) and 24.75% ($n = 239$) of skin dermatophytosis during the study period.
Conclusions The present work has provided recent data on the prevalence of several dermatophytes species circulating in Belgium. Such data is critical for the establishment of therapeutic strategies and measures for prevention and control of dermatophytes infections. Our study confirms the predominance of *T. rubrum* followed by *T. mentagrophytes* in the Belgian population but also highlights the emergence of new anthropophilic species such as *M. audouinii* and *T. violaceum* as causative agents of tinea capitis in children, in relation with African immigration.

P229

Fungal contamination in one hotel room: Does carpet coating in the floor enhance fungal contamination?

C. Viegas,[1] T. Faria,[1] E. Carolino,[1] R. F. P. Sabino[2] and S. Viegas[1]

[1]Environment & Health RG - Lisbon School of Health Technology - Polytechnic Insti, Lisbon, Portugal and [2]National Institute of Health Dr. Ricardo Jorge, Lisboa, Portugal

Objectives Several materials used indoors can contribute to enhance fungal contamination inside the building and taking this in consideration was developed a study intending to know the carpet influence when used in the floor of a hotel room.
Methods Twelve air samples of 250L (six in a room with carpet and six more in a room with wood floor) were collected through an impaction method with a flow rate of 140 L/min onto malt extract agar (MEA) supplemented with chloramphenicol (0.05%), using the Millipore air Tester (Millipore), during cleaning activities. Outdoor sample was also performed to be used as a reference. Surface samples from floor and desks, taken at the same time, were collected by the swabbing method. All the collected samples were incubated at 27°C for 5 to 7 days. After laboratory processing and incubation of the collected samples, quantitative (colony-forming units - CFU/m^3) results were obtained. Besides fungal contamination, we also assessed particulate matter contamination in both rooms during the same cleaning tasks. Two metrics were considered: particle mass concentration (PMC) - measured in 5 different sizes (PM0.5; PM1; PM2.5; PM5; PM10) - and particle number concentration (PNC) based on results given in six different diameters sizes, namely; 0.3 μm, 0.5 μm, 1 μm, 2.5 μm, 5 μm and 10 μm.
Results The air fungal load in the room with carpet ranged from 1 CFU.m-3 to 68 CFU.m-3 and in the room without carpet from 1 CFU.m-3 to 112 CFU.m-3. From both rooms, only one air sample of the one without carpet presented higher counts than the outdoors. Regarding surfaces, the room with carpet presented contamination in only one sample ($1x10^4$ CFU.m-2) and the room without carpet presented statistically significant differences from the carpeted room, with the first one having higher counts that ranged from $10x10^4$ CFU.m-2 to $115x10^4$ CFU.m-2. The most prevalent fungal genera were the same in the air of both rooms (*Penicillium* sp. 40.7% - 12.3% and *Cladosporium* sp. 43.5% - 55.4%). In the analyzed surfaces, isolates belonging to *Aspergillus fumigatus* complex were the only fungi found in the carpeted room, whereas in the other room we found *Penicllium* sp. (63.6%) and *Aspergillus* sp. (13.6%) as the most frequent genera. In the case of particles the room with carpet obtained significant higher values for both metrics (PMC and PNC), showing that carpet may has influence on particles' contamination of the room.
Conclusion Taking in account the obtained results, and contrarily to what was initially expected, carpeted floor does not seem to harbor higher fungal contamination. Nevertheless, when different particles parameters are analyzed, an increase in PMC and PNC was observed in room with carpet, compared to the room without carpet. More research had to be made to describe cleaning measures and characterize cleaning products since it seems that can have an influence in fungal contamination, besides carpet presence.