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MICOLOGIA

ASPERGILLUS SPP. ISOLATION FROM PATIENTS ATTENDING THE REGIONAL REFERENCE CENTER FOR CYSTIC FIBROSIS - UNIVERSITY HOSPITAL "POLICLINICO UMBERTO I", ROME.

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INTRODUZIONE

The alteration of the normal mucociliary clearance and the dysregulation of the epithelial defense activity, resulting from Cystic Fibrosis (CF) Transmembrane Regulator dysfunction, promote the entrapment and the proliferation of inhaled bacteria and fungi in CF patients. Aspergillus spp., filamentous and spore-forming saprophytes, are the most predominant fungi recovered from respiratory secretions of CF patients.

METODI

A total of 5957 search requests for Aspergillus spp. were processed from January 2016 to June 2019 on respiratory samples from 594 CF patients attending the Regional Reference Center for CF of our Hospital. The analysis, based on current criteria, allowed to record 77 positive patients. The microbiological status of the Aspergillus spp. positive subjects was compared to the bacterial colonization of 308 negative ones.

RISULTATI

A. fumigatus resulted the most prevalent species (64.56%) compared to other species: A. flavus (14.56%), A. terreus (15.55%), A. niger (5.33%). Patients who were chronically colonized showed a significantly higher rate of A. fumigatus isolation compared to intermittently colonized patients (95,45% vs 69,09%; p=0.016), and interestingly a higher rate of coinfection (72.72%; co-presence on Sabouraud Agar of two species and/or infection by different species in distinct samples). Patients who were intermittently positive for Aspergillus spp. showed a prevalence of A. fumigatus alone (56.36%), while the other species appeared less frequently (29.09%) as well as the cases of coinfenction (14.54%) (p<0.001). The microbiological analysis displayed a nearly significant correlation (p=0.054) between the presence of Aspergillus spp. and the chronic colonization by Achromobacter xylosoxidans; basically the non-fermenting Gram-negative bacteria in the Aspergillus positive population were isolated more frequently than in the negative group (13% vs 6%).

CONCLUSIONI

All together the data confirm that A. fumigatus is the most frequent species in CF patients. The preliminary analysis shows how Aspergillus infection most likely starts with A. fumigatus alone, evolving in coinfection with other species as the colonization turns from intermittent to chronic. Further investigation is necessary to address the clinical significance of the correlation between Aspergillus spp. and the onset of A. xylosoxidans.