



Different colonization patterns of *Aspergillus terreus* in patients with cystic fibrosis

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Due to the abnormal viscosity of airway secretions, patients with cystic fibrosis (CF) are at high risk of fungal colonization of the respiratory tract. *Aspergillus fumigatus* is by far the most common fungal species encountered in the CF context, but other species are increasingly reported such as *Scedosporium* spp. or *Geosmithia argillacea*, as well as other aspergilli including *Aspergillus terreus*. In our experience, this saprophytic fungus ranks the third among the filamentous fungi colonizing the respiratory tract of CF patients. Additionally, although relatively uncommon, infections caused by *A. terreus* present a high mortality rate due to its usually low susceptibility to systemic antifungals. Nevertheless, little is known about the epidemiology of *A. terreus* colonization/infections. In the present study, nine short tandem repeats of *A. terreus* were used to genotype 122 clinical isolates recovered from sputum samples from five patients with CF followed-up in two distinct hospitals in France (Angers and Giens hospitals). Sputum samples were collected over a two-month to seven-year period depending on the patients, and for each sample, all the obtained isolates were studied, with a maximum of five per sample. Three colonization patterns were observed. The first colonization pattern consisted of a chronic colonization (defined as the presence of the same genotype in at least two successive samples collected over a minimum period of two months) by a largely dominant genotype associated with two or three other genotypes found occasionally (patient 4) or over a short period (patient 3). The second colonization pattern consisted of a chronic colonization by two distinct genotypes simultaneously detected (patients 1 and 2). For the last patient (patient 5), who was followed during four years, 16 isolates recovered from 6 sputum samples were analyzed, corresponding to 8 genetically distinct genotypes which succeeded to each other. Numerous questions therefore raise from these different colonization patterns, regarding (i) the origin of the contamination of the patients by this relatively uncommon environmental fungus, (ii) the differences between genotypes in their ability to chronically colonize the airways of the CF patients, or (iii) the differences between CF patients in their individual susceptibility to same genotypes.

Résumé en anglais

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Liens

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