PROGRESSION OF FUNGAL MICROBIOTA IN CYSTIC FIBROSIS PATIENTS

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INTRODUCTION

The presence of fungi in the airways of patients with cystic fibrosis (CF) is common; the most prevalent fungi described in these patients using conventional culture methods are *Aspergillus* and *Candida*. However, the presence of fungal microbiota is underestimated and it is unknown its role in the disease progression.

OBJECTIVE

Describe changes over the time of fungal microbiota and evaluate clinical parameters related to the Cystic Fibrosis patients

METHODOLOGY

Prospective observational cohort study including 60 CF
Clinical, functional data and sputum at 0 and 6 months were collected

P. jirovecii detection: pAZ102-X, pAZ102-Y, SYBRGreen I)

RESULTS

	0	6		
Rate	42	39		
Isolates	62	62		
<i>Candida</i>				
-albicans	16.1	20.9		
-Parapsilosis	9.6	3.2		
-Glabrata	1.6	6.4		
-Tropicalis	-	4.8		
-Galli	-	-		
-others	1.6	1.6		
<i>P. jirovecii</i>	29.1	30.6		
<i>Aspergillus</i>				
-spp	11.2	4.8		
-restrictus	-	1.6		
<i>Cladosporium</i>				
-sp	4.8	6.4		
-cladosporoides	1.6	-		
-herbatum	-	1.6		
-ramotereillum	-	-		
<i>Criptococcus</i>				
-sp	1.6	-		
-flavescens	1.6	-		
-deformans	1.6	-		
<i>Uncultured fungi</i>		3.2		
-Lewia	1.6			
-Davidella	1.6			
<i>Ascomycetes</i>	1.6	-		
<i>Others</i>				
	<i>Triticum</i>	1.6	<i>Sacharomyces</i>	1.6
	<i>Dioscorea</i>	3.2	<i>Alternaria</i>	3.2
	<i>Rhodospirium</i>	1.6	<i>Wallemia sebi</i>	1.6
	<i>G. Fragans</i>	1.6	<i>Trichoporum</i>	1.6
		1.6	<i>Sporobolomyces</i>	1.6
			<i>Malasezia</i>	1.6
			<i>Pheniophora</i>	1.6
			<i>Zygosacharomyces</i>	1.6

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At 6 months: isolates were persistent in 47.6%

11.1% presented new isolates in negative subjects.

Mycobiota progression

Patients with previous fungus isolation, presented a worse lung function FEV1 (-120 mL) as compared with persistent negative patients (+109 mL; p = 0.088)

CONCLUSION

Fungi colonization in the airway measured by metagenomic techniques provides information on the prevalence and factors associated with this colonization. This technique enables the detection of unknown and uncultivable fungi especially in children and identifies a larger population of fungal microbiota in CF that remains over time. Newly acquired isolations have an impact on the disease progression