Background and Objectives: Fungi, particularly Aspergillus and Candida species, are increasingly found in cystic fibrosis (CF) airway fluids. However, their association with other CF pathogens, medications and lung function, especially in CF children, remains elusive. We analyzed the relationship of fungal colonization to microbiological and clinical parameters of pediatric CF patients.

Methods and Results: Fungal colonization and long-term clinical parameters like BMI and lung function were retrospectively studied in over 300 CF patients. Colonization was defined based on Chotirmall et al. (Chest 2010). Candida albicans (CA) was the most prevalent fungus detected in CF airway fluids, followed by C. non-albicans > Aspergillus fumigatus (AF) > A. non-fumigatus species. We found an association between fungal colonization and (among other parameters) bacterial co-colonization, lung function, BMI and antibiotic therapy.

Conclusion: This study suggests that colonization with CA or AF is affected by bacterial co-colonization and may modulate the disease severity already in pediatric CF patients.

Results: Eight patients harboured isolates of only one genotype, 3 patients harboured 2 genotypes, and one patient harboured 3 genotypes. Two clusters were demonstrated, cluster 1 with four patients and cluster 2 with two patients. The one patient with 3 genotypes, harboured one isolate with a unique genotype, two isolates belonging to cluster 1 and four isolates belonging to cluster 2. Overall, five out of 12 patients shared identical A. xylosoxidans isolates.

Conclusion: Nearly half of our patients shared a A. xylosoxidans genotype with one or more other patients. These results indicate possible interpatient transmission or acquisition from a common (environmental?) source.