

Prevalence of Aspergillus colonization and sensitization in patients of cystic fibrosis

Diksha Gupta¹ and meenu singh²

¹PGIMER

²Post Graduate Institute of Medical Education and Research,

August 7, 2021

Abstract

Background: *Aspergillus fumigatus* and other fungal species are common pathogens isolated in CF patients and they lead to a variety of diseases like ABPA and invasive aspergillosis. Aims and Objectives: To study the prevalence of *Aspergillus* colonization, sensitization and ABPA in our cohort of CF patients. Also, to study the various risk factors for *Aspergillus* colonization and ABPA in these patients. Methodology: This was a observational study in which 30 patients of cystic fibrosis between 0 to 18 years were enrolled visiting a tertiary care hospital in north India during January 2019 till December 2020. Data was collected on pre-structured proforma on cough swab and sputum c/s for bacteria and fungus, skin prick test for *Aspergillus fumigatus*, total IgE, *Aspergillus* specific IgE, *Aspergillus* specific IgG, galactomannan and CXR. Prevalence of *Aspergillus* colonization, sensitization and ABPA was calculated, Odds ratio for all the postulated risk factors for *Aspergillus* colonization and ABPA were calculated and further Chi square test was applied to check association of ABPA with pulmonary exacerbation. Results: Patients enrolled were between the age group of 4 months till 18 years of age with the median age being 4.75 years (IQR: 2.25 -11.75). 16.67% (n=5), 36.67% (n=11) of the patients enrolled in our study were colonized and sensitized with *Aspergillus fumigatus* respectively. While, 23.34% (n=7) of the patients had ABPA. We found positive association of *Aspergillus* colonization with multiple risk factors under study, in the following order of decreasing odds ratio, inhaled antibiotics (OR: 4.75) followed by use of azithromycin (OR: 3.5), inhaled corticosteroids (OR: 2.6), and atopy (OR: 1.3). Conclusion: *Aspergillus fumigatus* is a common colonizer in patients of cystic fibrosis (16.67%), and can lead to an inflammatory response and ABPA (23.34%). Use of azithromycin, inhaled antibiotics, inhaled corticosteroids and atopy increases the chances of *Aspergillus* colonization.

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