

Prevalence of Aspergillus colonization and sensitization in patients of cystic fibrosis

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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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