

Serum IgE and IgG Reactivity to *Aspergillus* Recombinant Antigens in Patients with Cystic Fibrosis

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ABSTRACT

Purpose: The diagnosis of Aspergillosis in Cystic Fibrosis (CF) patients remains a challenge due to overlapping features of both diseases. This is further complicated by inconsistent antibody reactivity to the currently used crude antigen, which has led a more focused evaluation of the efficacy of IgE response to a number of pure *Aspergillus fumigatus* recombinant proteins in patients with CF and asthma. In this study, we dissected the IgE and IgG responses to multiple *A. fumigatus* recombinant antigens in CF patients with different *Aspergillus* diseases.

Methodology: Serum IgE and IgG antibodies against Asp f1, Asp f2, Asp f3, Asp f4 and Asp f6 were measured in CF patients with Allergic Bronchopulmonary Aspergillosis (ABPA) (n=12), using ImmunoCAP technique. The results were compared to serum IgE levels in patients with *Aspergillus* sensitization (n=12), and serum IgG levels in patients with *Aspergillus* bronchitis (n=12).

Results: The ABPA group showed significantly greater IgE response to Asp f1, f2, f3 and f4 compared to *Aspergillus* sensitization group. Patients with *Aspergillus* bronchitis expressed higher IgG positivity to Asp f1 and Asp f2 compared to those with ABPA. There were very low IgE antibody levels against all recombinant antigens in patients with *Aspergillus* sensitization. Asp f1 IgG reactivity in ABPA patients correlated with positive culture.

Conclusion: The use of multiple recombinant antigens might improve the diagnostic accuracy in patients with cystic fibrosis complicated with ABPA or *Aspergillus* bronchitis. Asp f1 reactivity may relate to the presence of actively growing *Aspergillus* spp., which might be a useful marker for guiding antifungal therapy in ABPA.

Keywords: Recombinant antigens, Serology, *Aspergillus*, Asp f1, ABPA, Cystic fibrosis

Abbreviations: CF: Cystic Fibrosis; ABPA: Allergic Bronchopulmonary Aspergillosis

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