P124 Study of naive and memory T helper cell responses in patients of chronic rhinosinusitis with nasal polyps

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P125 Histoplasma capsulatum modulates the immune response exerted by mesenchymal stem cells

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P126 Effects of Histoplasma capsulatum infection on activation and proliferation of hematopoietic stem cells

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P124
Study of naive and memory T helper cell responses in patients of chronic rhinosinusitis with nasal polyps (CRS/NP) after in vitro exposure to Aspergillus flavus

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Objective: To study the CD4+ (naive) and CD4+ TCR (memory) in CD4+ T cell population after in vitro stimulation to Aspergillus flavus antigen in CRS/NP patients and healthy controls.

Methods: The study included 50 cases of CRS/NP (before and after six months of treatment) and 30 healthy controls. Postoperatively biopsy (fifth tissue) were subjected to KOH and culture for mycological investigation. Populations, blood sample (4 mL) was collected from cases and controls for peripheral blood mononuclear cells (PBMCs) separation. PBMCs were stained in vitro by Aspergillus flavus antigen (20 μg) and Phorbol myristate acetate. For 18 h at 37°C, cells were incubated. Cells were harvested after incubation and stained with different monoclonal antibodies such as CD3, CD4, CD8, CD16, and CD56 for flow cytometry analysis. Statistical analysis was done using SPSS software. Data were expressed as mean ± SD and the significance level was considered at probability below 0.05.

Results: The profiles of various CRS/NP patients and healthy controls were studied. The mean age and duration of disease of the patients were recorded as 28.92 ± 9.18 years and 18 months. A total of 24/30 (80%) cases were found positive for Aspergillus flavus from KOH/smear investigations. The percentage positivity of CD4+ T cells was significantly increased after A. flavus stimulation in patients compared with healthy controls. Decreased levels of CD4+CD16+ and CD4+ T cells were analyzed in patients before and after treatment as compared with healthy controls. The percentage of CD4+CD8+CD16+ T cells was found to be increased upon A. flavus stimulation in patients compared with the healthy control group.

Conclusion: The continuous exposure to fungal spores may induce unusual immune responses to Aspergillus flavus spores, triggering an allergic immune reaction with increased CD4+ T cell response. Increased levels of CD4+CD16+ and CD4+ T cells may turn the pathogenic reaction and highlight the dynamics of A. flavus reactive T cells involvement in initiating infection in cases of CRS/NP.

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Cryptococcus neoformans and Cryptococcus gattii-specific antibodies vary among children and adults with cryptococcosis and healthy from Colombia

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P126
Effects of Histoplasma capsulatum infection on activation and proliferation of hematopoietic stem cells

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Background: Cryptococcus neoformans and Cryptococcus gattii are two causative agents of Cryptococcosis, a life-threatening systemic mycosis of global distribution affecting mainly immunocompromised adults.

Objective: This study aimed to determine total and specific antibodies against C. neoformans and C. gattii antigens in sera from patients with cryptococcosis and from healthy individuals from Colombia, which will help to elucidate sero-epidemiological variations in the incidence of the disease in the country.

Methods: Sera from child and adult patients with cryptococcosis (n = 109) and sera from healthy children and adults from Colombia (n = 110) were studied. Using ELISA, total and Cg-specific levels of immunoglobulin IgG, IgA, and IgM were determined in sera. Results: Total IgG, IgA, and IgM levels were higher in HIV- compared with HIV+– patients with cryptococcosis. Specific IgG, IgA, and IgM levels needed to be higher in cryptococcosis patients than in healthy controls and to be higher in adults than in children, with a positive correlation between antibody reactivity and age. All serum immunoglobulins were more reactive against C neoformans than C gattii. Incorporating all samples, a positive correlation between total and specific IgG, IgA, and IgM levels was found.

Conclusion: In cryptococcosis patients from Colombia, serum immunoglobulins levels differed depending on HIV status, as reported previously. However, this study shows for the first time variations in immunoglobulin production among adults and children with cryptococcal disease and between Cg and Cg protein antigens. The observation of differential antibody reactivity with cryptococcal proteins encourages further studies of the humoral immunity for host defense against cryptococcosis.