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Role of serum IgG to *Aspergillus fumigatus* by CAP in the diagnosis of allergic bronchopulmonary aspergillosis in patients with eosinophilic asthma

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Background: Allergic bronchopulmonary aspergillosis (ABPA) is associated with hypersensitivity to Aspergillus fumigatus (Af), occurring most commonly in atopic patients with asthma and sometimes resulting in severe lung damage. However, there have been some difficulties in the diagnosis of ABPA, because there were no reference values based on individual serological methods. Objective: We evaluated the role of the serum IgG to Af using CAP system in the diagnosis of ABPA in patients with eosinophilic asthma. **Methods:** We used essential minimal criteria for the diagnosis of ABPA. A total of 29 patients with more than 500 cell/μL of peripheral blood eosinophil were enrolled. Prospective evaluation using skin prick test (SPT) for Af, serum total and specific IgE antibody to Af by CAP system, IgG andtibody to Af by immunodiffusion or CAP system and high resolution chest computed tomography (HRCT) of chest were performed. **Results:** Among all 29 patients, just a single patients (3.4%) compatible with ABPA who had six items of the essential minimal diagnostic criteria for diagnosis of ABPA. IgG antibody to Af was not detected by immunodiffusion in all of 26 patients who had performed IgG assay by immunodifffusion. By CAP system, IgG antibody levels were shown from 0 to 40.6 (mgA/L). These values were well correlated with IgE to Af by CAP system (r=0.40, p=0.04) **Conclusions:** Specific serum IgG to Af by CAP system is more sensitive, quantitative and helpful in the diagnosis of ABPA in patients with asthma. However, further studies are required to define reference values that can differentiate ABPA from patients with asthma who sensitized with Af.

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Soluble c-kit receptor and its ligand stem cell factor as serologic markers in aspirin hypersensitivity

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Background: Aspirin exacerbated respiratory disease (AERD) and aspirin induced uraticaria are two major phenotypes of aspirin hypersensitivity, in which mast cell and eosinophils are the key effector cells. Stem cell factor (SCF), the ligand of the c-Kit receptor, is essential for mast cell development, proliferation and survival and the SCF/c-kit pathway leads to mast cell and eosinophil tissue infiltration, cytokine production and airway hyperresponsiveness. **Objective:** We aimed to assess serum levels of SCF and c-kit in patients with two phenotypes of aspirin hypersensitivity. **Method:** We enrolled 68 patients having AERD (group I), 68 patients with aspirin intolerant chronic urticaria (AICU, group II), and 120 normal controls (group III). Concentration of SCF and c-kit in the sera of the subjects were measured by ELISA. **Result:** Mean c-kit levels and the ratio of c-kit to SCF in the sera of group I and group II were significantly higher than those of normal controls (118.26±39.67 ng/mL vs. 102.00±27.73 vs. 93.49±27.96, p<0.0001; 3.24±6.60 vs. 1.02±1.12 vs. 1.02±0.61, p<0.012), while no significant differences were found in serum SCF level among three groups. There was a significant difference between AERD and AICU. In group I, serum c-kit level was significantly higher compared to those with well controlled state (135.53±46.05 ng/mL vs. 103.24±21.24, p=0.04), and positively correlated with sputum eosinophil count (r=0.374, p=0.036), whereas negatively correlated with FEV1% predictive value (r=-0.264, p=0.011). In group II, there was no correlation between c-kit or SCF levels and clinical parameters. Atopic patients tended to show higher SCF level than non-atopics without statistical significance (114.96±63.64pg/mL vs. 98.34±36.96, p=0.226). **Conclusion:** Serum c-kit level may reflect airway inflammation and asthma symptom severity in AERD patients. It may be a potential serologic marker for differentiating two phenotypes of ASA hypersensitivity, AERD and AICU. Further study will be needed to understand their pathologic roles in patients with ASA hypersensitivity. This study was supported by a grant from the Korean Health 21 R&D Project, Ministry of Health & Welfare, Republic of Korea (A03001).