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Common variable immunodeficiency with seasonal variation

I. S. Choi*, S.-Y. Lim, K.-M. Kim, Y.-W. Cho

Key words: allergy; common variable immunodeficiency; hypogammaglobulinemia; immunoglobulin G.

Common variable immunodeficiency (CVID) is characterized by pan-hypogammaglobulinemia and recurrent sinopulmonary infection. As both immunoglobulin (Ig)G and the other

immunoglobulin isotypes, including IgE, are low (1) and the Th1 cytokines interleukin (IL)-12 and interferon (IFN)- γ are elevated in many patients with CVID (2), it is speculated that IgE-mediated allergic diseases occur rarely in CVID patients.

However, Schwartz et al. (3) reported on an adult with co-existing allergic bronchopulmonary aspergillosis and CVID. Here, we present a case of CVID with seasonal allergic symptoms and decreased serum IgG levels during the allergic season.

SJW was a 32-year-old man who had suffered from recurrent pneumonia since the age of 23. He was diagnosed with CVID at another hospital and had received immunoglobulin replacement therapy regularly. He was transferred to our hospital in late-1996. At presentation, T3, T4, T8, B, and natural killer (NK)

cells were 83.0, 7.6, 70.5, 6.7, and 6.8%, respectively; IgG, IgA, and IgM levels were 508, <31, and <29 mg/dl, respectively; IgE was <27.4 IU/ml. Human IgG (25 g) had been administered only intermittently, at 2–3-month intervals, for economic reasons. Although the patient rarely needed antibiotics, he complained of sneezing, rhinorrhea, and occasional severe cough at night during spring. Wheezing was heard in his chest at times.

The patient told us that he believed that his serum IgG level was lower in spring. In a review from his chart, his allergic symptoms were recorded almost exclusively from February to May (spring). The average serum IgG level in the years 1997–2003 that was corrected considering the irregular interval of the replacement therapy [median: 69.5 days in spring and 82.0 days from August to November (other seasons)], was significantly lower in spring than in other seasons (228.7 ± 50.6 vs 289.8 ± 73.3 mg/dl, $P = 0.018$; Fig. 1). The serum total IgE level measured seven times over the past 7 years, including during spring, remained undetectable.

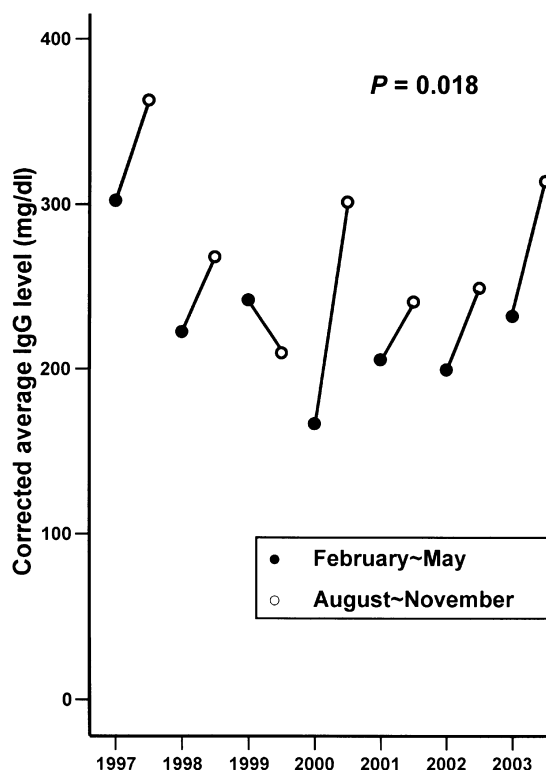


Figure 1. The corrected average serum immunoglobulin G level from February to May was significantly lower than that from August to November in an adult patient with common variable immunodeficiency.

Skin prick tests disclosed only weak (+2) responses to alder, willow, pine, and *Penicillium* extracts.

Popa and Nagy (4) reported that allergy skin tests tended to be negative, and total IgE remained <10 IU/ml in CVID. However, one of five patients with CVID was atopic in their report. It has been suggested that the IgE and IgG immune responses are regulated independently. Alternatively, large amounts of serum-specific IgE may not be necessary for a local airway reaction. There is increasing evidence of so-called 'intrinsic' asthma related to locally produced IgE.

We demonstrated that the serum IgG level in our CVID patient varied seasonally with his allergic symptoms. Hypogammaglobulinemia in asthmatics is associated with the use of systemic corticosteroids (5), but our patient had never taken systemic steroids. Infants with a family history of atopy are reported to be at increased risk for severe respiratory syncytial virus infection (6). The IL-4- and IL-13-induced inhibition of the Th1 response and consequent suppression of IFN- γ production have been demonstrated in atopy and asthma, which may explain the increased risk for infection. However, this pathway involving IFN- γ is known for cell-mediated immunity. Popa and Nagy (4) showed that, of subjects with IgG deficiency, many were atopic, but they did not mention the possibility of atopy as a contributing factor to IgG deficiency.

To the best of our knowledge, this study is the first to show that atopy exacerbates IgG deficiency in CVID. The exact mechanism remains to be determined.

*Department of Allergy
Chonnam National University Medical School
8 Hakdong
Dongku
Gwangju 501-757
Korea
Tel: 82-62-220-6571
Fax: 82-62-225-8578
E-mail: ischoi@chonnam.chonnam.ac.kr

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Educational seminars for adults with atopic dermatitis: preliminary report about 103 patients

G. Dagregorio*, G. Guillet

Key words: atopic dermatitis; educational seminar; topical corticosteroids.

As in diabetology and asthmology (1), various educational consultation projects have been conceived (2, 3) to help patients with atopic dermatitis (AD). Nevertheless this educational effort is generally aimed at children (4), although a number of

adult patients in therapeutic failure are also eager for information.

We report the results of this educational experimentation with the first 103 adult participants. They were 52 females and 51 males with severe AD. The mean age was 29 years ranging from 18 to 81 years. Each educational seminar was held with an attendance of 15–20 patients.

These 2½ h sessions aimed at promoting a good understanding of AD and its complications and treatments, as well as making patients aware of possible triggering factors. An anonymous questionnaire was given to all participants before starting the session to collect the following data: age of the onset of the first symptoms, evolving pattern of eczema, possible remission period and age of reactivation. Questions dealt also with possible accompanying symptoms, understanding of relationship between asthma and eczema, prior detection of triggering factors, prior allergologic investigations, and treatments.

At the end of the session, patients answered a series of questions about the benefits gained by attendance at the seminar. The answers to this questionnaire are summarized below.

The mean age of onset of AD was 8 years ranging from birth to 47 years. Eczema was present without interruption since childhood in 71% of cases. Twenty-nine percentage of patients had known a remission period with reactivation at puberty (10%) or during adulthood for several months (11%) or for short summer periods (8%). Association with other atopic symptoms was reported in 79% of cases: breathing problems (27%), rhinitis (29%) and conjunctivitis (23%). Eighty-seven percentage of patients signalled some known aggravating factors: contact allergens (68%), food allergens (70%) and aeroallergens (63%).

Allergologic investigations had been made in 66% of patients to identify contact allergens (39%), food allergens (56%) or inhalant allergens (52%). The role of a food allergen had been proved in 44% of cases: egg (22 patients), peanut (eight), milk (six), kiwi (five), fish and shells (four), hazelnut (four), wheat flour (two), tomato (three), potato (two), mustard (two), and spices (two).

We report the preliminary results of an educational experience on eczema with 103 adult patients.