Elevated Serum IgE Levels in Children with Nephrotic Syndrome, a Steroid-Resistant Sign?

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Dear Sir,

In patients with minimal change nephrotic syndrome (NS), an elevated serum IgE may be a clue for steroid therapy, as suggested by the study of Chan et al. [1]. A high level of serum IgE in patients with NS who have frequent steroid-dependent or resistant relapses, was also reported [2]. What does elevated IgE mean in the NS; steroid-sensitive or steroid-resistant? We measured the serum levels of IgE in 17 children (aged 2–12 years, mean 6.8 years), who were divided into two groups; steroid-sensitive (SS) and steroid-resistant (SR). The atopic histories of patients were documented.

The children were treated with a standard dose of prednisone (1.5–2 mg/kg/day) for 8 weeks. SS means the patient’s proteinuria disappeared, and SR, regardless of the clinical condition, remains two pluses (+ +) or more, at the end of the period. Although the IgE levels of two groups were not significant, the value of IgE in the nephrotic phase was higher than in remission (p < 0.005). The percentage difference of elevated serum IgE (more than 450 IU/ml) in group SS compared with SR was significant (p = 0.029), but in patients with post-strepto-coccal glomerulonephritis (PSGN) it was not (table 1). Four children in the SS group had elevated serum IgE including 2 who had atopic histories, and 1 had a relapsing nephrotic syndrome, and 1 was steroid-dependent. Three with relapsing NS and one with an atopic history were in the SR group. Four of 5 patients with PSGN had atopies. The serum IgE levels were elevated in all 4 children who had relapsing NS, but not frequently. The proteinuria of patients in group SR disappeared after prolonged use of prednisone (3 cases) and adding cyclo-phosphamide (3 cases). The IgE levels all returned to the normal range in the SR group, but in only 1 in the SS group.

Table 1. Number of elevated serum IgE in each group

<table>
<thead>
<tr>
<th>Group</th>
<th>Elevated Serum IgE</th>
</tr>
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<tbody>
<tr>
<td>SS</td>
<td>4</td>
</tr>
<tr>
<td>SR</td>
<td>2</td>
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The significance and mechanism of elevated serum IgE in children with NS are uncertain yet, though it is well known that IgE-mediated allergy is a disadvantage due to harmful factors. Our study shows that the patients with elevated serum IgE are not sensitive to steroid therapy. Further studies on this topic may be helpful to discover the mechanism of the disease.

References
Chan MK, Chan KW, Jones B: Immunoglobulins (IgB, IgA, IgM, IgE) and complements (C3, C4) in nephrotic syndrome due to minimal change and other forms of glomerulonephritis, a clue for steroid therapy? Nephron 1987;47:125–130.