Serum Soluble IL-2 Receptor as a Biomarker in IgG4 Related Disease

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Objective:

Previous reports showed that serum soluble IL-2 receptor (sIL-2R) might reflect disease activity in IgG4 related disease (IgG4RD). This study aimed to elucidate clinical significance of serum markers including sIL-2R in patients with IgG4RD.

Methods:

This retrospective study enrolled 44 patients with IgG4RD, and investigated correlation between serum markers (sIL-2R, IgG4, IgG, CRP, CH50) and clinical indices. The concordance between clinical course (improved, stable, worsened) and changes of serum markers was also investigated.

Results:

At baseline, serum sIL-2R (Rs=0.543, $p<0.001$) and IgG4 (Rs=0.458, $p<0.01$) were significantly correlated with the number of involved organs. During the follow up period (median 70 months, range 7-160 months), 33 patients were treated with corticosteroid. Except for two patients who developed malignant lymphoma, 37 improved, two worsened, and three patients showed stable clinical course. Among 37 patients who showed clinical improvement, sIL-2R and IgG4 decreased in 32 patients. Two patients who worsened showed increase of sIL-2R, while IgG4 had decreased in both patients. In the two patients who developed malignant lymphoma, serum IgG4 decreased constantly, while sIL-2R increased again after the development of lymphoma.

Conclusions:

Serum sIL-2R is a potential biomarker of IgG4RD which may reflect disease burden and clinical course. Increase of serum sIL-2R during the stable clinical course of IgG4 RD may occasionally be associated with a development of malignant lymphoma.