



POSTER PRESENTATION

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The correlations of serum interleukin-6 (il-6) levels and serum soluble il-6 receptor levels with disease activity in systemic juvenile idiopathic arthritis patients with and without tocilizumab treatment

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Introduction

Interleukin-6 (IL-6) and soluble IL-6 receptor (sIL-6R) have been demonstrated to play a significant role as inflammatory mediators in systemic juvenile idiopathic arthritis (SJIA). Tocilizumab, a humanized anti-IL-6 receptor antibody, becomes a new biologic treatment for SJIA nowadays but the correlation of serum IL-6 levels and serum sIL-6R levels with disease activity in SJIA with and without tocilizumab treatment are still unclear.

Objectives

To determine the correlations of serum IL-6 levels and serum sIL-6R levels with disease activity in SJIA patients with and without tocilizumab treatment

Methods

SJIA patients in pediatric rheumatology clinic, Ramathibodi hospital between September 2011 and June 2013 were enrolled in this study. Patients were followed up three times in 2-3 months interval. Fifteen healthy children were included as normal controls. Demographic data was collected. During the visit, patients were evaluated according to Juvenile Arthritis Disease Activity Score-71 (JADAS-71) and blood samplings were collected for complete blood count, erythrocyte sedimentation rate, IL-6 levels, and sIL-6R levels, then patients were categorized into 4 groups; 1) active disease with systemic features and arthritis 2) active disease with only arthritis 3) remission on medication 4) remission off medication

Results

Forty-two SJIA patients, 131 blood samplings were included in this study. Seventeen patients (40%) were treated with tocilizumab during the study. Serum IL-6 levels in patients without tocilizumab treatment significantly elevated in active disease with systemic features and arthritis [median (IQR) = 101.8 (303.2) pg/mL] when compared to active disease with only arthritis [median (IQR) = 4.5 (23) pg/mL], and remission on medication [median (IQR) = 1.5 (0.55) pg/mL], whereas serum IL-6 levels in patients with tocilizumab treatment were not different between groups but there were significantly different when compared to healthy children ($p < 0.05$). In addition, the correlation between serum IL-6 levels and JADAS-71 in patients without tocilizumab treatment ($r = 0.71$, $p < 0.001$) was stronger than patients with tocilizumab treatment ($r = 0.42$, $p = 0.01$). Serum sIL-6R levels in SJIA patients with and without tocilizumab treatment were significantly higher when compared to healthy children ($p < 0.05$). Interestingly, in patients with tocilizumab treatment, serum sIL-6R levels were extremely higher [median (IQR) = 1,110.3 (840.2) ng/mL] than patients without tocilizumab treatment [median (IQR) = 94.2 (82.7) ng/mL].

Conclusion

The correlation between serum IL-6 levels and disease activity in patients without tocilizumab treatment was stronger than patients with tocilizumab treatment. In addition, serum sIL-6R levels in patients with tocilizumab treatment were extremely higher than patients without tocilizumab treatment.

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Disclosure of interest

None declared.

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