Diminished soluble levels of growth arrest specific protein 6 and tyrosine kinase receptor Axl in patients with rheumatoid arthritis

Abstract

Aim: Growth arrest specific protein 6 (Gas-6) and its tyrosine kinase receptor Axl plays an important role in apoptosis, and regulation of innate immune response, therefore, we investigated their plasma concentrations in Rheumatoid arthritis (RA) patients and correlated them to clinical, laboratory and radiological parameters of the disease.

Methods: Plasma from 77 RA patients and 50 normal healthy subjects were assayed for plasma Gas6 and Axl levels. Demographic, clinical and serological data were prospectively assessed. Rheumatoid arthritis disease activity was assessed using 28-joint Disease Activity Score (DAS-28) and functional capacity by modified health assessment questionnaire (mHAQ). Standardized x-rays for hands and feet were done to all participants.

Results: The level of Gas6 and Axl were significantly decreased in the RA patients compared to those of the healthy control subjects. Levels of Gas6 correlated positively with Axl levels in both patients and healthy control. Gas6 levels were remarkably reduced in those patients with erosive RA than those without. Levels of Gas6 were found to be negatively correlated with the presence of erosive disease and positively correlated with DAS-28, ESR, Leucocytosis and IL6.

Conclusion: The plasma concentrations of Gas6 and Axl are altered in RA patients and thus may have a role in RA pathogenesis. Further mechanistic studies on the involvement of all TAM receptors tyrosine kinases pathway in RA are needed to help in understanding the pathogenesis and possibly aid in diagnosis and future treatments of RA especially for patients with erosive disease.

Key words: apoptosis, Axl, growth arrest-specific protein 6, inflammation, receptor tyrosine kinase, rheumatoid arthritis.