

## Correlative Study of Serum Interleukin-18 and Disease Activity, Functional Disability and Quality of Life in Rheumatoid Arthritis Patients

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**Abstract :** The aim of the current study was to demonstrate whether serum Interleukin-18 (IL-18) is increased in rheumatoid arthritis (RA) and its correlation with disease activity, functional disability and quality of life in RA patients. The study included 30 RA patients and 20 healthy normal control subjects. The RA patients were diagnosed according to the 2010 ACR/EULAR classification criteria for RA with the exclusion of those who had diabetes mellitus, endocrine disorders, associated rheumatologic diseases, viral hepatitis B or C and other diseases with increased serum IL-18 level. All patients were subjected to clinical evaluation of the musculoskeletal system. Disease activity was assessed by disease activity score 28 with 4 variables (DAS 28). Functional disability was assessed by health assessment questionnaire disability index (HAQ-DI). The quality of life was assessed by Short form-36 (SF-36) questionnaire. Radiological assessment of both hands and feet by Sharp/van der Heijde (SvH) scoring method. Laboratory parameters including erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), rheumatoid factor (RF) and anti-cyclic citrullinated peptide antibody (ACPA) were assessed in patients and serum level of IL-18 in both patients and control subjects. There was no statistically significant difference between patient and control group as regards age and sex. Among patients, 29 % were females and the age range was between 25 to 55 years. Extra-articular manifestations were presented in 56.7% of the patients. The mean of DAS 28 score was  $5.73 \pm 1.46$  and that of HAQ-DI was  $1.22 \pm 0.72$  while that of SF-36 was  $40.03 \pm 13.96$ . The level of serum IL-18 was significantly higher in patients than in the control subjects ( $P = 0.030$ ). Serum IL-18 was correlated with ACPA among the patient group. There were no statistically significant correlations between serum IL-18 and DAS28, HAQ-DI, SF-36, total SvH score and the other laboratory results. In conclusion, IL-18 is significantly higher in RA patient than in healthy control subjects and positively correlated with ACPA level. IL-18 is associated with extra-articular manifestations. However, it is not correlated with other laboratory parameters, disease activity, functional disability, quality of life nor radiological severity.

**Keywords :** disease activity score, Interleukin-18, quality of life assessment, rheumatoid arthritis

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