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Pre-analytical and analytical confounders of serum calprotectin as a biomarker in rheumatoid arthritis

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ABSTRACT	SUPPLEMENT	REFERENCES
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RECOMMENDATIONS

Abstract

Background

There is a need for additional biomarkers to assist in the diagnosis and prognosis of rheumatoid arthritis (RA). The aim of our study was to evaluate the (pre-analytical, analytical and clinical) performance of serum calprotectin as a marker of inflammation in RA.

Methods

The study population included 463 rheumatologic patients (including 111 RA patients and 352

controls) who for the first time consulted a rheumatologist, 20 healthy controls and 27 patients with an infectious disease. Calprotectin was measured (using four different assays) in serum or in serum and EDTA plasma (healthy controls and infectious disease group). For rheumatologic patients, results for C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), rheumatoid factor (RF) and anti-cyclic citrullinated peptide antibody (ACPA) were available.

Results

Results for blood calprotectin were assay- and matrix-dependent, with higher values found in serum than in plasma. Serum calprotectin was higher in RA patients than in rheumatologic diseased controls and in healthy controls. Serum calprotectin was lower in RA patients than in patients with an infectious disease. Serum calprotectin was associated with disease activity (DAS score). The area under the curve (AUC) to discriminate RA from controls was 0.756 for CRP, 0.714 for ESR and 0.726–0.783 for calprotectin.

Conclusions

Our data document that calprotectin measurement is assay- and matrix-dependent. Serum calprotectin is associated with disease activity. Additional (prospective) studies are warranted to further evaluate the prognostic and diagnostic value of blood calprotectin measurements.

Keywords: [biomarker](#); [rheumatoid arthritis](#); [serum calprotectin](#)

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