

THE ROLE OF ANGIOPOIETIN-LIKE PROTEIN TYPE 8 IN THE DEVELOPMENT OF RENAL DYSFUNCTION IN RHEUMATOID ARTHRITIS

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Relevance. Early detection of renal dysfunction is important to prevent the progression of rheumatoid arthritis (RA). Angiotensin-converting enzyme 2 (ACE2) is associated with metabolic and inflammatory parameters as well as oxidative stress.

Purpose: to evaluate the association of ACE2 and renal dysfunction (RD) in RA.

Materials and Methods.

The study included 96 patients with a reliable diagnosis of RA (mean age 54.4 ± 11.6 years, disease duration 10.7 ± 8.56 years; 57.3% with moderate RA activity).

All patients underwent calculation of glomerular filtration rate (GFR) according to the CKD-EPI formula (2009). Circulating ACE2 levels were measured by enzyme immunoassay.

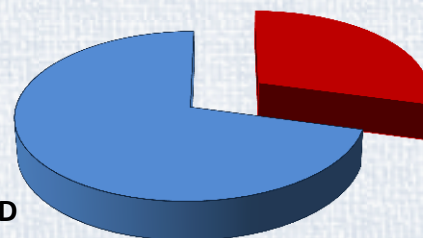
Results and Discussion.

Renal dysfunction (RD) was determined when calculated GFR was <60 mL/min/ per 1.73 m². Reduced renal function was observed in 28 (29.2%) patients with RA (Picture 1).

Serum ACE2 levels were significantly higher in patients with RD compared with the group of RA patients with normal renal function (695 ± 324 pg/mL versus 543 ± 248 pg/mL, respectively; $p=0.015$) (Picture 2).

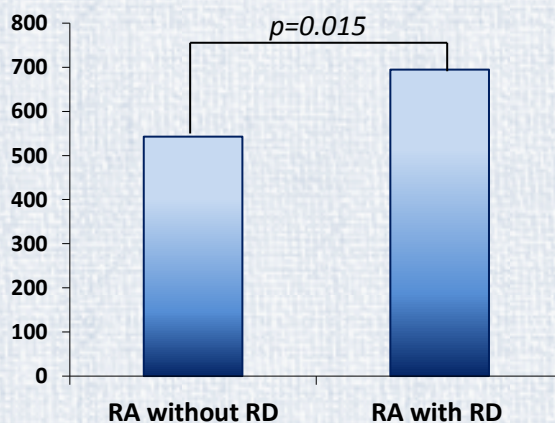
Serum ACE2 was inversely related to calculated GFR ($r = -0.29$, $p=0.039$) and directly related to age ($r = 0.25$, $p=0.04$), C-reactive protein level ($r = 0.31$, $p=0.007$) and blood creatinine level ($r = 0.34$, $p=0.019$).

The results indicate that ACE2 may affect glomerular filtration rate and inflammation.



■ RA with RD
■ RA without RD

Picture 1. ACE2 levels in patients with RA



Picture 2. ACE2 levels in patients with RA

Conclusions.

High serum levels of ACE2 can adversely affect renal function in RA.

