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### Review Article

#### The Role of Reactive Oxygen Species in Immunopathogenesis of Rheumatoid Arthritis

Abbas Mirshafiey and Monireh Mohsenzadegan

Department of Immunology, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran

#### Corresponding Author:

Abbas Mirshafiey, PhD;

Department of Immunology, School of Public Health, Tehran University of Medical Sciences, Tehran-14155, Box: 6446, Iran.

Tel-Fax: (+98 21) 6646 2267, E-mail: mirshafiey@tums.ac.ir

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#### Abstract:

Rheumatoid arthritis is a disease associated with painful joints that affects approximately 1% of the population worldwide, and for which no effective cure is available. It is characterized by chronic joint inflammation and variable degrees of bone and cartilage erosion. Oxygen metabolism has an important role in the pathogenesis of rheumatoid arthritis. Reactive oxygen species (ROS) are produced in many normal and abnormal processes in humans, including atheroma, asthma, joint diseases, aging, and cancer. TNF- $\alpha$  overproduction is thought to be the main contributor to increased ROS release in patients with RA. Increased ROS production leads to tissue damage associated with inflammation. The prevailing hypothesis that ROS promote inflammation was recently challenged when polymorphisms in Neutrophil cytosolic factor 1(Ncf1), that decrease oxidative burst, were shown to increase disease severity in mouse and rat arthritis models. It has been shown that oxygen radicals might also be important in controlling disease severity and reducing joint inflammation and connective tissue damage. In this review article, our aim is to clarify the role of ROS in immunopathogenesis of Rheumatoid arthritis.

#### Keywords:

[CIA](#) . [Immunopathogenesis](#) . [Rheumatoid arthritis](#) . [ROS](#)

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