

# The Role of Ultrasonography and Power Doppler Sonography in Rheumatoid Arthritis

Lejla Milisic

Clinic of Radiology, University Clinical Centre of Sarajevo, Bosnia & Herzegovina

E-mail: [lejiasm@gmail.com](mailto:lejiasm@gmail.com)

## **Abstract:** Background:

RA is a chronic and systemic autoimmune disease that has manifestations of peripheral joint effusion, synovial inflammation, and bone erosion. Ultrasonography is very helpful for the diagnosis of RA, especially in the early stages of the disease when clinical manifestations and X-ray images remain obscure [1,2]. US can detect synovial proliferation, joint effusion, and bone erosions with more sensitivity, which helps with diagnosis. In addition, because US is simple, convenient and radiation-free, it is ideal for long-term monitoring of treatment and bone erosion.

## Objectives:

To systematically evaluate the literature addressing the role of ultrasonography in the diagnosis and prognosis of early undifferentiated inflammatory arthritis and RA.

## Methods:

We performed a systematic literature review of the performance characteristics of US for diagnosing and prognosticating RA.

## Results:

US i PDUS correlate significantly with clinical findings and common and novel inflammatory markers along with synovial histopathology in patients with RA. It has the ability to detect subclinical synovitis not appreciated by clinical examination alone. Studies have shown that US is valid, reliable, sensitive to change, and largely feasible. Therefore, it has a potential role in standard monitoring and follow-up of patients for response to treatment as well as prediction of future structural damage.

## Conclusion:

In most aspects of assessment of rheumatoid diseases US is comparable to or even better than the expensive imaging techniques such as MRI. The combination of high-frequency probes and improved power Doppler technology provides a great opportunity to study image aspects of inflammatory conditions such as tenosynovitis and enthesitis that were traditionally considered difficult to image.

**Key words:** ultrasonography, early diagnosis, rheumatoid arthritisultrasonography, early diagnosis, rheumatoid arthritis