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**How is Active Osteoarthritis Differ than Sero-negative  
Rheumatoid Arthritis in Clinical Diagnose ?**

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**Date of Submission:** 30/6/2018.

**Report** submitted fulfil the requirements of third year of Basic Medical Science

## Abstract

Arthritis comes in many forms. In fact, this term can apply to a number of conditions, including, rheumatoid arthritis, gout, and osteoarthritis. Two of these conditions—rheumatoid arthritis (RA) and osteoarthritis (OA) are often confused among patients.<sup>1</sup>

OA is a degenerative condition that develops because of excessive wear to the cartilage between the joints. RA is an autoimmune disease, chronic systemic inflammatory disease that affects about 1% of the population. It leads to irreversible joint damage and systemic complications. Since the discovery by Waalcr and Rose et al. of the so-called rheumatoid factor, patients have been classified as seropositive or seronegative. Twenty years ago, textbooks stated that one quarter of rheumatoid patients were seronegative, only 38% of patients are diagnosed with seronegative RA.<sup>2</sup>

## Introduction

Clinical, epidemiologic and genetic data support the long-held contention that seropositive RA is a single disease entity. By contrast, comparable data suggest that the term “seronegative rheumatoid arthritis” has been used over the years to label patients who may not have rheumatoid disease. Many of these people have spondylarthritis or an arthropathy which cannot be classified.<sup>3</sup>

Seronegative RA is the diagnosis of RA without the presence of certain antibodies in the patient's blood. Otherwise, seronegative patients may also simply possess extremely low levels of the antibodies – not enough to warrant a seropositive diagnosis. Many seronegative Rh patients go on to develop antibodies years after their initial diagnosis, Dr. Cush, noting that as many as 80 % of seronegative cases will become seropositive over time, some cases develop into other autoimmune disease as well. This sometimes causes the diagnosis to change to a seropositive rheumatoid factor or anti-CPP diagnosis. This is one of the many reasons that a patient can still be diagnosed with Rh even if they are seronegative.<sup>2</sup>

Just as having the presence of antibodies doesn't necessarily solidify a seropositive RA diagnosis, the absence of antibodies doesn't necessarily rule out a RA diagnosis. How commonly rheumatoid factor is found in the serums of patients with and without arthritis depends on the sensitivity and specificity of the procedure used to detect antigammaglobulins.<sup>3</sup>

It is thought that seropositive patients experience a more severe disease course than seronegative patients. according to a study published in April 2016 in Annals of the Rheumatic Diseases In a European 234 people who had both types of rheumatoid arthritis and had experienced symptoms for less than two years, those with seronegative RA showed higher levels of inflammation and more affected joints. But other studies have also shown that in some patient cases, the progression is comparable and sometimes is there is little difference. This is where it becomes complicated in trying to classify rheumatoid arthritis into sub-types and to reach a solid diagnosis.<sup>1</sup>

Although, seronegative patients don't develop rheumatoid nodules as these are commonly displayed in seropositive patients.<sup>3</sup>

Seropositive patients are 2.8 to 3.6 times more likely than controls to have family members with RA. On the other hand, relatives of patients with seronegative RA are no more liable to have rheumatoid disease than are randomly selected people. Comparable data exist for

American Indians trial , Moreover, in twins studies, the concordance for seropositive arthritis is six times as great in monozygotic as in dizygotic pairs. No concordance is observed in twins with seronegative RA. Thus, there is a genetic predisposition only for the seropositive disease.<sup>4</sup>

Recent advances in tissue typing suggest that this predisposition may be related in part to the HLA antigen system. Several studies have shown that the presence of HLA DR4/DW4 is increased in patients with seropositive arthritis: from 44 % to 69 % of seropositive patients possess this antigen, compared to 17 to 24 % of controls. It has recently been demonstrated that DW4 is not simply a marker for seropositivity-patients with rheumatoid factor but without arthritis do not have an increased prevalence of this antigen. In contrast, in a large cooperative study, DR4 was found in only 24% of 46 seronegative patients, compared to 25 % of controls and 52% of 227 seropositive patients.<sup>3</sup>

## **Discussion**

During the last two decades, the nosology of inflammatory arthritis has undergone considerable revision. For example, “rheumatoid spondylitis” and “rheumatoid variants” are now recognized as misnomers, and have been replaced with more accurate labels such as ankylosing spondylitis, Reiter’s syndrome and psoriatic arthropathy. Because these disorders were not well recognized 20 years ago, in many patients spondylarthritis was labelled seronegative rheumatoid arthritis.<sup>1</sup>

OA is diagnosed with imaging tests, including x-rays and MRIs, looking for progressive joint damage and deterioration. A physical examination looks at affected joints for tenderness, redness, swelling. Blood tests are done to rule out RA. Because the symptoms of RA and OA are similar, in that they both involve stiffness and sometimes pain in the joints. But the stiffness associated with RA tends to last longer than OA, and is worse upon waking up in the morning. RA symptoms generally have a rapid onset over a short period of time comparable to Osteoarthritis symptoms develop slowly and gradually worsen over many years.<sup>3</sup>

According to the Arthritis Foundation, people with seronegative disease may be diagnosed with a different disease altogether. If, say a person diagnosed with seronegative RA develops a skin rash, her diagnosis might change to psoriatic arthritis. Other changes or new test results could lead to a new diagnosis of chronic gout or osteoarthritis which is the most common.<sup>2</sup>

A seronegative result along with what are thought to be rheumatoid arthritis symptoms could potentially indicate other conditions altogether. Often times when inflammation is present or consistent it means that the seronegative patient may have osteoarthritis instead of rheumatoid arthritis. This is a common confusion.<sup>1</sup>

Dr Suresh (September 2004 JRSM) highlights the importance of early referral in a patient with suspected rheumatoid arthritis. As he indicates, the diagnosis is a clinical one and absence of rheumatoid factor (RF) is not informative.<sup>4</sup>

## **Conclusion**

The Presence or Absence of RF or ACPA Doesn’t Make or Break an RA Diagnosis, RF can be positive in multiple diseases, such as Hepatitis C, endocarditis, and multiple myeloma.

Seronegative rheumatoid arthritis is more difficult to diagnose since there is no test for it. Instead, doctors must rely on symptoms to diagnose the disease. A seronegative result along with what are thought to be rheumatoid arthritis symptoms could potentially indicate other

conditions altogether. Often times when inflammation is present or consistent it means that the seronegative patient may have osteoarthritis instead of rheumatoid arthritis. This is a common confusion. This differential diagnosis able to help doctors improve treatments for rheumatoid arthritis, or other satiation.

## **References**

1. Gulbins H, Meiser BM, Reichenspurner H, Reichart B. rheumatoid arthritis; 2012.
2. Saha M, Zbinden R, Redwood SR, Marber MS. of diagnostic criteria for osteoarthritis; 2016.
3. Roell, W., Lu, Z. J., Bloch, W., Siedner, S., Tiemann, & Kolossov, McDuffie FC. Bunch T: Immunologic tests in the diagnosis of rheumatic diseases; 2015.
4. Rose HM. Raaan C. Pearce E. Linman MO: revision of diagnostic criteria for rheumatoid arthritis; 2012.