

## Rheumatoid Arthritis: Early Identification and Treatment

Dr. Amit Dwivedi<sup>1\*</sup>, Dr. Raj Kumar Sharma<sup>2</sup>, Dr. Preeti Ranjan Sinha<sup>3</sup>

<sup>1</sup> Professor, Department of Orthopaedics, Santosh Deemed to be University, Ghaziabad

<sup>2</sup> Professor, Department of Occupational Therapy and Orthopaedics Deemed to be University, Ghaziabad

<sup>3</sup> Assistant Professor, Department of Orthopaedics, Santosh Deemed to be University, Ghaziabad

### ABSTRACT:-

Rheumatoid arthritis, often known as RA, is an autoimmune illness that causes inflammation and worsens over time. Rheumatoid arthritis can result in joint deterioration and disability if it is not properly treated. The purpose of this research was to investigate and assess the many approaches to the early identification of rheumatoid arthritis as well as the treatment options that slow its progression.

The presence of clinical and laboratory evidences can be used to make a prediction about the prognosis of rheumatoid arthritis (RA). The introduction of new criteria for the classification of RA has made it possible to begin treatment at an earlier stage. As a result, the necessity of detecting and treating rheumatoid arthritis in its early stages is discussed in this article.

**Keywords:** ACCP, early treatment, new criteria, outcome, regression, rheumatoid arthritis.

### INTRODUCTION: -

Within the scope of this systematic review, we analyzed the procedures for the early identification of rheumatoid arthritis as well as the treatment techniques that slow the disease's course. Online databases such as Pub Med, Research Gate, MEDLINE, and Google Scholar were utilized in the process of carrying out the research for the literature. We looked at the research that was written in English and published in journals that had been reviewed by experts. The data from the original research paper have been incorporated.

ACCP, early treatment, new criteria, outcome, regression, rheumatoid arthritis, and rheumatoid factor were some of the keywords that were used in this study. We gave careful attention to reading each study's title as well as its abstract. We conducted additional research into the references provided in each paper, looking for a wide range of other studies.

The nature of the studies was described as cross-sectional. The trials were designed to be prospective and included diagnosis and treatment as the primary foci of their attention. Only a few studies looked at the effectiveness of various RA screening approaches. Additionally, one study looked at the effectiveness of arthroplasty in treating a significant joint (knee). There was no evaluation of any of these investigations using a score system, and there were no cadaver studies included in the review.

## RESULTS AND DISCUSSION:-

The search of the literature turned up a large number of studies on rheumatoid arthritis; however, only a small number of those studies contained data evaluating the methods for early diagnosis and the treatment strategies to minimize the progression of the disease. For this particular study, a total of 5 other studies were considered.

A patient suffering from rheumatoid arthritis and a healthy volunteer were both scanned using  $^{99m}\text{Tc}$ -3PRGD2 in the course of a study that was carried out in Mongolia, China, by Wu Y et al. [1]. When compared to disease-free joints, the joint afflicted by rheumatoid arthritis was found to have an uptake of  $^{99m}\text{Tc}$ -3PRGD2 that was noticeably higher than that of the disease-free joints. As a result of this, they came to the conclusion that  $^{99m}\text{Tc}$ -3PRGD2 is an agent with great potential for the early diagnosis of rheumatoid arthritis.

I Vallbracht [2] conducted research in Germany on 715 patients to determine the RF isotypes for IgG, IgA, and IgM using an ELISA test. Of these patients, 295 had rheumatoid arthritis (RA), while the remaining 163 had degenerative or other inflammatory diseases. According to the findings of the study, the tests with the best sensitivity were IgM – RF (66.4%), followed by CCP (64.4%). The tests with the highest specificity were CCP (97.1%), followed by IgG – RF (91.0%). According to the findings of the study, the screening approach for RA should include IgM – RF and CCP assays since these are more accurate than the other RF isotypes.

The combined detection of ACCP and RF with imaging has a high diagnostic efficiency in the diagnosis of rheumatoid arthritis (RA), according to the findings of another cross-sectional study carried out by Desheng Yang et al. [3], which was conducted on 148 patients at the Qingdao haici hospital in China. ACCP and RF are indications that are frequently utilized for the diagnosis, but each test has its own set of restrictions to consider. The use of combination testing can mitigate the drawbacks of using a single index test, hence lowering the probability of an incorrect diagnosis or one not being made at all.

A cross-sectional observational study conducted by Miura M et al. [4] sought to examine the current state of 195 RA patients' care at Chiba University's orthopaedic department. Thirty percent of patients had already undergone orthopedic surgery, 76% of patients used methotrexate, and 30% used biologics. One in sixteen patients had several procedures. Total knee arthroplasty was the most common procedure (22%), and nearly half of these patients had bilateral TKA. This study's limitation was the absence of information on the patient VAS and the number of swollen/tender joints, making it impossible to assess the disease activity to its full potential. Another drawback is that this was the first observational study to look at how RA patients were being treated at the institution, and no prior data were available to compare the study's findings with. As a result, any shifts in drug information or orthopaedic surgery trends could not be demonstrated.

The nation of Germany served as the location for the research [5]. Treatment with abatacept appears to have lower costs per response (remission) compared to treatment with adalimumab as a first bDMARD, according to the findings of the study, which suggests that an early treatment of patients with abatacept has advantages compared to treatment with adalimumab for both the patients and the payers. Additionally, the results of the study suggest that an early treatment of patients with abatacept has advantages compared to adalim It is possible to lengthen the amount of time spent in remission, which will result in reduced overall costs for medical resources.

## **CONCLUSION:-**

The importance of RA early diagnosis cannot be overstated. Studies have revealed ways to detect rheumatoid arthritis early and therapy plans to slow its progression. The IgM-RF and CCP assays are stated to have surpassed other RF isotypes to become the screening assays. A promising tool for the early detection of rheumatoid arthritis is <sup>99m</sup>Tc- 3PRGD [2]. When it comes to the course of treatment, improvements in physical function and long-term RA signs and symptoms are required. To facitinib's safety profile was superior to that of several other medications, even when standard DMARDs were not used. The investigations involving to facitinib in individuals from various ethnic groups are advised by the authors.

## **REFERENCE:-**

1. Vallbracht I, Helmke K. Additional diagnostic and clinical value of anti-cyclic citrullinated peptide antibodies compared with rheumatoid factor isotypes in rheumatoid arthritis. *Autoimmunity Reviews*. 2005; 4(6):389-394.
2. Yang D, Li H, Zhang S, Yang G, Liu S, Liu Z. Clinical analysis of blood markers and imaging for diagnosis and prognosis of rheumatoid arthritis, 2020.
3. Miura M, Hagiwara S, Nakamura J, Suzuki M, Lee T, Kobayashi T et al. The current situation of the treatment of rheumatoid arthritis in Chiba University Orthopaedic department. *Chiba Medical J*. 2019; 95:27-32.
4. Wu Y, Zhang G, Wang X, Zhao Z, Wang T, Wang X et al. Early detection of rheumatoid arthritis in rats and humans with <sup>99m</sup>Tc3PRGD2 scintigraphy: imaging synovial neoangiogenesis. *Oncotarget*. 2016; 8(4):5753- 5760.
5. Neubauer, Aljoscha S et al. Cost-Effectiveness of Early Treatment of ACPA-Positive Rheumatoid Arthritis Patients with Abatacept. no. January, 2018.