

Seroprevalence of Rheumatoid Factor in Arthritis Cases at a Tertiary Care Centre.

V.S Rathod¹, R. Sinha^{2*}, S.R More³

Corresponding author: DR. Saleha khan

INTRODUCTION

Rheumatoid arthritis (RA) is a chronic, progressive, inflammatory autoimmune disease of unknown etiology involving multiple peripheral joints.^{1,2} It affects millions of people worldwide, with a prevalence between 0.5% to 1%.^{3,4} The disease is more common in females as compared to males and generally occurs between the ages of 40 and 60 years.^{1,5} The onset is gradual, with the predominant symptoms being pain, morning stiffness and swelling of multiple joints. Smaller joints of hand and feet are affected early and later the symptoms often spread to the knees, ankles, elbows, hips and shoulders.^{1,6}

The diagnosis of Rheumatoid Arthritis is made according to clinical findings and serological testing. The main useful serological markers are rheumatoid factor and antibodies to citrullinated peptides.¹ Rheumatoid Factor (RF) is a specific autoantibody directed towards the Fc portion of IgG molecule.^{1,3} The IgM rheumatoid factors (IgM-RF) are the major RF species found in RA and they can be detected in 60–80% of established cases of RA and 50–60% of RA patients in the early stages of the disease.^{7,8} RF was the sole serologic criterion widely used in the diagnosis of RA for decades. RF has a low specificity as it may be found in healthy elderly individuals and patients with other autoimmune disorders or infections. Rheumatoid factor also has some prognostic value with regard to disease manifestations as seropositive RA is often associated with more aggressive joint disease and is more commonly complicated by extra articular manifestations than seronegative RA.¹ With this regards the present study was done to know the prevalence of Rheumatoid factor as a serological marker in clinically suspected arthritis cases at a tertiary care centre.

MATERIALS AND METHODS

This prospective study was carried out in the Department of Microbiology, Dr. S.C.G.M.C, Nanded between January 2016 to December 2019. The blood samples were collected from clinically diagnosed patients of Arthritis attending outpatient and in-patients department. Serum was separated from blood and was subjected to RF test. Rheumatoid factor-IgM test was carried out by latex agglutination rapid test kit by Pathozyme Diagnostics according to manufacturer's instructions. Positive and negative controls, provided along with the kit, were put up with every run of the test process. A positive test is indicated by the presence of agglutination in the sera sample

OBSERVATIONS AND RESULTS

Out of 456 patients with clinically diagnosed arthritis 302 were females and 154 were males. Most of the patients were between the age group of 20 to 50 years. The prevalence of rheumatoid factor was 48(10.52%). Out of 48 RF positive cases 9 were males and 39 were females. Most of the RF positive patients were in the age group of 21-60 (Table 1.) Females have a greater predisposition for rheumatoid arthritis than males and out of the 48 positive cases 2 males and 8 females were in the age group of 21-40 years. 7 male and 29 female cases were in the age group of 41-60 years. All the positive cases showed titres 1/16 – 1/28.

Table 1. Age and Sex wise distribution of RF positive patients

| Age Group | No. of Males | No. of Females |
|------------|--------------|----------------|
| 0-20 yrs | - | - |
| 21- 40 yrs | 2 | 8 |
| 41-60 yrs | 7 | 29 |
| 61-80 yrs | - | 2 |
| >80 yrs | - | - |

DISCUSSION

RF was the first auto antibody detected in patients with RA. It was discovered in the early twentieth century and became the primary serological test used in the diagnosis of RA.

In the past few years it has been noted that early aggressive treatment in rheumatoid arthritis reduces joint damage and improves functionality. As the drugs used are potentially toxic, we require an early and accurate diagnosis of RA and also information about prognosis in an individual patient. As the joint damage is irreversible, early recognition and treatment is emphasized, with the goal of halting progression of the disease and to prevent crippling. It is important to diagnose RA at a very early stage in the disease, when often not all clinical symptoms are manifest and so good serological markers are needed.^{1,5,9}

The findings of our study correlates with the study conducted by Chandrashekhar et al.,¹ who reported 7% of positivity for RF and 5 out of 7 cases were found to be in females. All of the cases were in the age group of 21-60.

Sucilathangam et al.,⁵ reported 10.6% of positivity for RF and 8 out of those 9 cases were females, which is similar to our study. Most of the cases were in the age group of 21-60.

Ali Alguweri et al.,⁹ reported that 97 out of 115 patients were females and median age was 57.5 for males and 48.5 for females. They reported high prevalence of RF which was 81.7%. The discrepancy in result between our and their study is most probably due to the fact that their sample included only clinically diagnosed cases of Rheumatoid Arthritis whereas our study included Arthritis cases as a whole.

CONCLUSION

Rheumatoid arthritis is diagnosed according to clinical findings and serological testing. The main useful serological markers are rheumatoid factor and antibodies to citrullinated peptides. Although Rheumatoid Factor has high false positivity and low specificity yet when the test is coupled with the clinical findings, ESR and anti ccp antibodies the chances of correctly diagnosing Rheumatoid Arthritis becomes very high.

It is also very useful as a prognostic tool, as RF seropositive patients have an increased chance of destructive joint disease. Thus evaluation of RF is beneficial to the patients as it aids in instituting early and aggressive therapy for Rheumatoid Arthritis which helps in halting the progression of the disease.

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