Original article:

Prevalence of Rheumatoid Arthritis in Adults Patients: A Hospital Based Study

# Dr. Mohammad Azmoddin1

1 Associate Professor, Chennai Medical College Hospital and Research Centre, Trichy, Tamil Nadu, India

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**Abstract:**

**Introduction:** Rheumatoid arthritis (RA) is a chronic systemic autoimmune disease characterized by a symmetrical inflammation of the synovium, resulting in tenderness and destruction of bone and cartilage in various joints, particularly the smaller joints of the hands and feet. Although the cause of RA is unknown, autoimmunity plays a pivotal role in its chronicity and progression. RA affects approximately 1.0% of the general population, women more often than men, and the inflammatory burden of the disease results in functional disability.

**Materials & Methods:** Forty patients were included in this study. The case control study was carried out in the Department of Orthopaedics, Chennai Medical College Hospital and Research Centre, Trichy, Tamil Nadu, India. Duration of this study was six month.

**Results:** In the present study, forty patients were included, out of which 15% male and 85% female. From the forty patients most of the people were belongs to 41-50 age group followed by 51-60 (27.5%) ,35-40 (25%) ,61- 65(17.5%).Elevated ESR were in the 52.5% of group, rest of the people were normal. Same as in case of CRP positive found in the 52.5% & 47.5% were negative.

**Conclusion:** The prevalence in RA group quite high as compared to general population

**Keywords:** Autoimmune, Rheumatoid Arthritis, Synovial Joints, Anti-Rheumatic Drugs.

# INTRODUCTION

RA is a chronic autoimmune inflammatory [disease.it](http://disease.it/) is predominant in females. It has been estimated that RA affects approximately 1% of the population in the world. Although the etiology of RA is unknown yet genetic factors, environmental factors and lifestyle factors are associated with its development.1–4 In RA there is cartilage and bone destruction due to inflammation of the synovium Joints of the hands and feet are the first to get affected in RA.5 RA patients are at high risk for cardiovascular diseases. It includes atrial fibrillation stroke and mortality as well as other autoimmune diseases. The association of RA with cardiovascular diseases is of particular importance as both conditions increase with age and the world’s population is aging. The condition is very much varied. It can increases and decrease alternatively and reoccur or progress very fast leading to debilitating joint destruction.1,2 For RA treatment, there are lots of anti- rheumatic drugs (DMARDs) and biological agents In RA the effectiveness of different agents is somewhat impeded due to various classification of disease, severity and endpoints of treatment. 6,7

The aim of this study was to know the prevalence of rheumatoid arthritis in tertiary care hospital at Study Area: The case control study was carried out in the Department of Orthopaedics, Chennai Medical College Hospital and Research Centre, Trichy, Tamil Nadu, India Study Duration: Duration of this study was six month. Sampling Technique & Data Collection: A total of 40 patients of rheumatoid arthritis who were willing included in the study and were randomly selected and recruited. Other data of age, sex, life style, family history of diabetes and other diseases/disorders were collected. Height, weight and waist circumferences were measured with the subject barefooted and lightly dressed.

Blood pressure was measured with special precaution individuals were requested to take 10 min rest at sitting position before measuring the BP. Blood pressure was measured by standardized protocols, and hypertension was defined based on the criteria of the Seventh Report of the Joint National Committee guidelines. According to this protocol, systolic and/or diastolic blood pressure ≥130/85 mmHg and/or the current use of antihypertensive medication in diabetes diagnosed as hypertension. Before registering for the study written consent was obtained from each participant Blood sample (5ml) was collected from each subject.

# MATERIALS & METHODS

Study Population: Forty patients were included in this study.

by centrifuging blood and analyzed for fasting blood glucose, total cholesterol triglycerides and HDL cholesterol were estimated by CHOD-PAP8, triglycerides9 and HDL Cholesterol10 was estimated by spectrophotometric assays employing commercially available kits. LDL and VLDL were calculated from Freidewald’s formula.

**Data Analysis:** Data were analyzed by statistically.

**Results:**

**Table 1. Gender-wise distribution**

|  |  |  |
| --- | --- | --- |
| Gender | Number of patients | Percentage |
| Male | 6 | 15 % |
| Female | 34 | 85% |
| Total | 40 | 100 % |

**Table 2. Distribution of age according to age group**

|  |  |  |
| --- | --- | --- |
| Age Group | No. Of Patients | Percentage |
| 35-40 | 10 | 25% |
| 41-50 | 12 | 30% |
| 51-60 | 11 | 27.5% |
| 61-65 | 7 | 17.5% |
| Total | 40 | 100% |

**Table 3. ESR level in the patients**

|  |  |  |
| --- | --- | --- |
| ESR | No. of patients | Percentage |
| Normal | 29 | 72.50 |
| Elevated | 11 | 27.50 |

**Table 4. CRP level in the patients**

|  |  |  |
| --- | --- | --- |
| CRP level | No. of patients | Percentage |
| Postive | 21 | 52.50 |
| Negative | 19 | 47.50 |

**Table 5. Rheumatoid Factor in the patients**

|  |  |  |
| --- | --- | --- |
| Rheumatoid Factor | Number of patients | Percentage |
| More than 3 times | 24 | 60 |
| Less than 3 times | 13 | 32 |
| Negative | 3 | 8 |

**Table 6. Anti CCP Factor in the patients**

|  |  |  |
| --- | --- | --- |
| **Anti CCP Factor** | Number of patients | Percentage |
| More than 3 times | 31 | 78 |
| Less than 3 times | 3 | 8 |
| Negative | 6 | 15 |

**Table 7. Comparison of parameters in case & control group**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Parameters | Case | | Control | | P |
| group(N=21) | | group(N=19) | | value | |
| Wc  (centimeters) | 13(61.9%) | | 15(78.9%) | | 0.745 |
| Elevated | 11(52.3%) | | 3(15.7%) | | <0.0001 |
| BP(mmHg) | | | | | |
| Low | 11(52.3%) | | 7(36.8%) | | <0.0001 |
| HDL(mg/dl) | | | | | |
| Elevated TGs | 7(33.3%) | | 6(31.5%) | | .467 |
| Abnormal | 5(23.8%) | | 2(10.5%) | | <0.0001 |
| Sugar (mg/dl) | | | | | |

In the present study, forty patients were included, out of which 15% male and 85% female. From the forty patients most of the people were belongs to 41-50 age group followed by 51-60 (27.5%), 35-40 (25%), 61-65(17.5%).

Elevated ESR were in the 52.5% of group, rest of the people were normal. Same as in case of CRP positive found in the 52.5% & 47.5% were negative .In our study found that, Rheumatoid Factor more than 3 times elevated in 60% of people & less than 3 time elevated in 32.5% of people & 7.5 were negative. Same as in case of Anti CCP more than 3 times elevated in 77.5% of people & less than 3 time elevated in 7.5% of people & 15 were negative. The most common abnormality found in the Case group that were RA group like elevated BP & Low HDL found 52.3%, Elevated TGs 33.3% and abnormal sugar 23.8% were found.

# DISCUSSION

Multiple studies have been done and several studies are continued to find out early diagnostic methods and to decrease DALY as the prevalence of metabolic syndrome and morbidity and mortality related to rheumatoid arthritis has increased. All over the world various studies in RA have already been performed. Among the population, the frequency of disease has been found to range from 14 to 63%. Karvounaris SA, Sidiropoulos et al and LA Montagna G., Cacciapuoti F et al 11–13 revealed in their studies that it is not always the values found are higher in comparison to controls but factors such as disease activity, inflammatory markers, severity of the disease, treatment related to rheumatoid arthritis. Patients of RA have been reported to have increased premature atherosclerosis leading to adverse cardiovascular episodes and have also been found to have association with metabolic syndrome. 14

In the present study, the most common abnormalities found in RA group were increased waist circumferences, increased arterial pressure (52.3%), low serum HDL (52.3%), elevated serum triglycerides (33.3%) and abnormal blood sugars (23.8%). Out of these abnormalities arterial pressure, HDL and sugar levels were the most significant differences between RA and the control group (p<0.0001).

# CONCLUSION

The prevalence in RA group quite high as compared to general population. Most common parameters which contribute the metabolic syndrome in study group as well as in control group but some statically difference was there in BP, low HDL and abnormal sugar.

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