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Original Research Article

Prevalence of Rheumatoid Arthritis among Patient at a Tertiary Care Teaching Institute, Gujarat

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Conflict of interest: Nil

Abstract

Background: Rheumatoid arthritis (RA) is an idiopathic disease characterized by severe joint pain, inflammation of muscles and joints, and many co-morbidities like CVS and lymphadenitis, which impairs normal social life.

Method: Out of 365 patients with joint and muscular inflammation, 31 had a positive RA factor. RA factor antibodies tests were tested by the RE-latex slide agglutination test by ASPEN Diagnostics. The samples were centrifuged at 3000 rpm for 2 minutes. Serum was then separated by using a micropipette.

Results: Out of 365 suspected patients, 31 (8.49%) had a positive RA factor. It was more prevalent in adults aged between 41-60 years i.e., 24 (12.7%), followed by those above 60 years, which was 5 (5.5%).

Conclusion: Although RA is an idiopathic disease, the present prevalence study of RA factors is highly prevalent in those above 40 years of age. This study demands further genetic, nutritional, and environmental studies because a decrease in all physiological factors begins after 40 years only.

Keywords: RA Factor, ASPEN Diagnostics, Micropipette, Serology, Inflammation, Gujarat.

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Introduction

Rheumatoid arthritis (RA) is an idiopathic disease characterized by inflammation in synovial tissues of joints and bones. It is to be driven by genetic and epigenetic factors but environmental factors and cigarette smoke and dust exposure and dietary habits aggravate the inflammation conditions [1]. Uncontrolled RA can lead to joint degradation, severe disability, reduced quality of life, co-morbidities, and premature death, posing a significant social burden and hindrance to family economy [2].

The majority of RA patients suffer from anxiety and depression as they feel burdened and dependent on family. It is reported that the prevalence of RA is generally higher in industrialized countries, possibly due to environmental risk factors, air pollution, genetic predisposition, and delay in approaching medical aid due to socioeconomic factors [3]. Moreover, co-morbidities like CVS and enlargement of lymph nodes may aggravate the manifestations of RA [4]. Hence, an attempt is made to evaluate RA factors in different age groups and in both sexes.

Material and Method

365 patients who regularly visited the Swami Narayan Institute of Medical Sciences and Research, Kalol, Gandhi Nagar, Gujarat-382721, were studied.

Inclusion Criteria: Patients referred by the medicine and orthopedic departments above the age of 20 years. The patients who gave their consent in writing for studies were selected.

Exclusion Criteria: Patients below 20 years, patients with joint pain trauma, and patients who refused to give their consent in writing for the study were excluded.

Method: 365 patients were studied individually for socio-economic status, any habits, and profession. Blood examination included CBC and RBS. Moreover, 5 ml of venous blood was collected early in the morning and subjected to the RA factors test and RF latex slide agglutination test by ASPEN diagnosis. The samples were centrifuged at 3000 rpm for two minutes. Serum was then separated by using a micropipette. The positive results were recorded.

The duration of the study was from July 2025 to February 2026.

Statistical Analysis: The positive and negative findings are compared, and positive findings of RA factors were studied in different age groups with percentages. The statistical analysis was carried out using SPSS software. The ratio of males and females was 2:1.

Observation and Results

Table 1: Out of 365 patients 31 (8.49%) had RA factor positive.

Table 2: 2 (2.2%) RA factors positive in 87 patients aged between 21-40, 24 (12.7%) patients had RA factors positive in 188 patients aged between 41-60 years, 5 (5.5%) patients had RA factors positive in above 60 years (>60 years) of age.

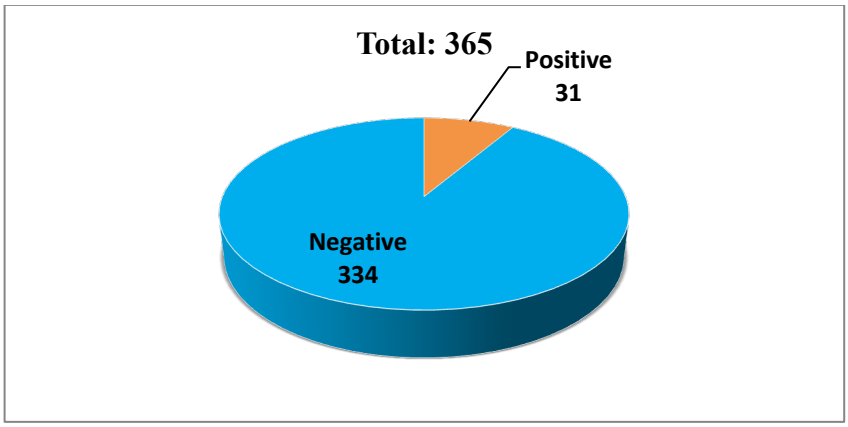

Figure 1: Out of 365 patients 31 (8.49%) were positive

Table 1: The number of positive cases in different age group

Age group (years)	No. of Samples	No. of Positive	Prevalence
0-20	0	0	0%
21-40	87	2	2.2%
41-60	188	24	12.7%
>60	90	5	5.5%

Majority of positive were aged between 41-60 years follow by >60 years

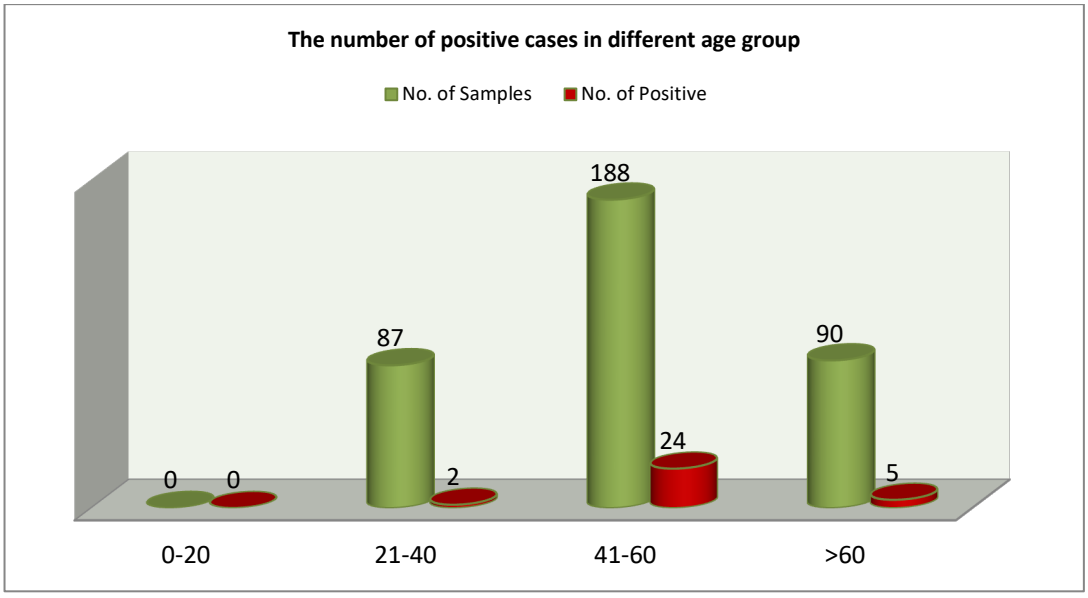

Figure 2: The number of positive cases in different age group

Discussion

A present study of the prevalence of rheumatoid arthritis in the Gujarat population. Out of 365 serum samples, 31 (8.49%) had positive RA factors (Table 1). In the distribution of age groups, 2 (2.2%) are in the 21-40 age group, 24 (12.7%) are in the 41-60 age group, and 5 (5.5%) are in the above 60 years of age group (60 < years) (Table 2). These findings are more or less in agreement with previous studies [5,6,7]. RA factors are antibodies directed against antigen sites in FC fragment of human and animal IgG their frequent occurrence in the rheumatoid arthritis makes them useful for diagnosis and monitoring for the disease. It is reported that highest prevalence is also observed in china i.e., above 70 years of age hence it can be hypothesized that majority of factory positive in elderly people could be decreased physiological factors like metabolism, anabolism and ketabolism as the age advances all these processes regress and lessen the immunity hence passive RA factor may become active and starts degenerating the joints and cardio-vascular system, certain malignancies and osteoporosis except asthama and inflammatory bowel diseases [8]. RA Patients also suffer from depression, anxiety, hypothyroidism, and venous thrombosis. Renal and liver disease is frequent in males, and obesity increased in females. Prevalence of RA varies considerably across different geographical units in India, with regions like Uttarakhand and Tamil Nadu showing significantly higher prevalence rates compared to Goa and Madhya Pradesh. These disparities can be partially attributed to the differences in the socio-demographic index and environmental factors. Environmental factors such as climate, dietary habits, and levels of pollution exposure in different regions may also influence the incidence of RA [9]. For example, the cold and damp climates in certain areas may exacerbate RA symptoms. In air-polluted areas due to industrialization [10]. A higher prevalence of RA is noted. It is interesting to note that the prevalence of RA cases is lower in Kerala State, which could be due to early exposure to medical aid, high quality of life, increased literacy rate, and awareness of disease [11]. It is also reported that nutritional or dietary habits play a vital role for the function of genes. If they do not get proper or required nutrition, they become passive, and then they are called "silenced genes" [12]

Summary and Conclusion

In the present study of the prevalence of RA among patients of Gujarat. The estimation of RA factor antibiotics is simple and cost-effective. It is found that the prevalence of RA is highest in elderly people aged between 40-60 years and followed by those above 60 years; hence, the present study demands genetic, biochemical, pathophysiological, environmental, and nutritional studies to throw more light upon this prevalence being higher in elderly patients because the exact pathogenesis of RA is still unclear.

Limitation of study: Owing to remote location of research centre, small number of patients, lack of latest techniques we have limited findings and results.

This research work was approved by the ethical committee of Swami Narayan Institute of Medical Sciences and research Kalol, Gandhi Nagar, Gujarat-382721 were studied.

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