

Analysis of Prevalence of Haematological Abnormalities among Rheumatoid Arthritis Patients at a Tertiary Care Hospital

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ABSTRACT

Background: Rheumatoid arthritis is a systemic inflammatory disorder with the potential to cause destructive joint disease, significant disability, and increase mortality. The present study was undertaken for assessing the haematological abnormalities among rheumatoid arthritis patients.

Materials & Methods: A total of 80 RA patients were enrolled. Complete demographic details of all the patients were obtained. Blood samples were obtained from all the patients and were sent to pathology department. Haematological profile was assessed. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software.

Results: Anaemia was found to be present in 53.75 percent of the patients, while leucocytosis was found to be present in 15 percent of the patients. Thrombocytosis was found to be present in 26.25 percent of the patients.

Conclusion: Anaemia, thrombocytosis and leucocytosis are a

common finding in rheumatoid arthritis patients.


Key words: Haematological, Rheumatoid Arthritis.

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Article History:

Received: 03-02-2020, Revised: 27-02-2020, Accepted: 22-03-2020

Access this article online	
Website: www.ijmrp.com	Quick Response code 
DOI: 10.21276/ijmrp.2020.6.2.027	

INTRODUCTION

Rheumatoid arthritis (RA) is a systemic inflammatory disorder with the potential to cause destructive joint disease, significant disability, and increase mortality. Women are affected more commonly than men. The diversity in the prevalence of rheumatoid arthritis has led to enhanced interest in genetic and environmental (urban, rural) risk factors associated with rheumatoid arthritis. When RA is left uncontrolled, the RA patient may experience joint deterioration, severe disability, decreased quality of life, the onset of comorbidities and premature mortality. Many rheumatic conditions can be diagnosed or suspected based on taking history and physical examination.¹⁻³

Clinical findings are also the mainstay in selecting appropriate diagnostic laboratory tests requested for confirmation of RA or ruling out other rheumatic diseases. Sometimes, diagnosis of RA may be possible based on clinical grounds alone, nevertheless there are no disease-specific clinical features or laboratory test to be diagnostic for RA. The onset of RA as polyarticular disease develops insidiously in about three-quarters of patients.⁴⁻⁶ Identification of RA at initial presentation and treatment at earlier stage can affect disease course, prevent the development of joint erosions or retard progression of erosive disease. Early diagnosis

and treatment may affect disease outcomes even to a remission state.⁷ Hence; under the light of above-mentioned data, the present study was undertaken for assessing the haematological abnormalities among rheumatoid arthritis patients.

MATERIALS & METHODS

The present study was conducted in the Department of Medicine, Heritage Institute of Medical Sciences, Varanasi, Uttar Pradesh (India) and it included assessment of haematological abnormalities among rheumatoid arthritis patients. Ethical approval was obtained from institutional ethical committee and written consent was obtained from all the patients after explaining in detail the entire research protocol.

Exclusion Criteria

- Patients aged less than 18 years
- Those cases who had arthritis as part of an established disease, such as, TB arthritis, gonococcal arthritis and with complaints of arthralgia
- Those who have mixed disorder like SLE and RA; SS and RA and MCTD and overlap syndrome.

After meeting the exclusion criteria, a total of 80 RA patients were enrolled. Complete demographic details of all the patients were obtained. Blood samples were obtained from all the patients and were sent to pathology department. Haematological profile was assessed. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software.

RESULTS

In the present study, a total of 80 patients with RA were enrolled. Mean age of the patients of the present study was 53.8 years. 48.75 percent of the patients of the present study belonged to the age group of more than 50 years. 36.25 percent of the patients belonged to the age group of 31 to 50 years.

60 percent of the patients were females while the remaining 40 percent were males. In the present study, mean weight and mean BMI of the patients was 89.85 Kg and 28.12 Kg/m² respectively. Mean Hb was found to be 9.85 gm%. Mean TLC count was found to be 10.96 per mm³.

In the present study proximal inter-pharyngeal joint involvement occurred in 87.5 percent of the patients. Meta-carp-pharyngeal joint involvement occurred in 70 percent of the patients. Wrist involvement and elbow involvement occurred in 65 percent and 50 percent of the patients. Anaemia was found to be present in 53.75 percent of the patients, while leucocytosis was found to be present in 15 percent of the patients. Thrombocytosis was found to be present in 26.25 percent of the patients.

Table 1: Age-wise distribution of patients

Age group (years)	Number of patients	Percentage of patients
18 to 30	12	15
31 to 50	29	36.25
More than 50	39	48.75
Total	80	100

Table 2: Gender-wise distribution

Gender	Number of patients	Percentage of patients
Male	42	40
Females	48	60
Total	80	100

Table 3: Descriptive parameters

Parameter	Number
Mean weight (Kg)	89.85
Mean BMI (Kg/m ²)	28.12
Mean Hb (gm %)	9.85
Mean TLC (per mm ³)	10.96
Mean ESR (mm/hr)	42.1

Table 4: Frequency of joint involvement

Joint involvement	Number of patients	Percentage of patients
Proximal interphalangeal	70	87.5
Metacarpophalangeal	56	70
Wrist	52	65
Elbow	40	50
Shoulder	35	43.75
Ankle	29	36.25
Subtalar	20	25
Knee	23	28.75
Cervical spine	19	23.75

Table 5: Blood investigations

Blood investigations	Number of patients	Percentage of patients
Anaemia	43	53.75
Leucocytosis	12	15
Thrombocytosis	21	26.25

DISCUSSION

Rheumatoid arthritis (RA) is a chronic systemic autoimmune disease that primarily affects the lining of the synovial joints and is associated with progressive disability, premature death, and socioeconomic burdens. A better understanding of how the pathological mechanisms drive the deterioration of RA progress in individuals is urgently required in order to develop therapies that will effectively treat patients at each stage of the disease progress.⁸⁻¹⁰ Scientific advances have improved therapies that prevent progression of irreversible joint damage in up to 90% of patients with RA. Early treatment with methotrexate plus glucocorticoids and subsequently with other DMARDs, such as inhibitors of TNF, IL-6, or Janus kinases, improves outcomes and prevents RA-related disability.¹¹ Hence; under the light of above-mentioned data, the present study was undertaken for assessing the haematological abnormalities among rheumatoid arthritis patients.

In the present study, a total of 80 patients with RA were enrolled. Mean age of the patients of the present study was 53.8 years. 48.75 percent of the patients of the present study belonged to the age group of more than 50 years. 36.25 percent of the patients belonged to the age group of 31 to 50 years. 60 percent of the patients were females while the remaining 40 percent were males. In the present study, mean weight and mean BMI of the patients was 89.85 Kg and 28.12 Kg/m² respectively. Mean Hb was found to be 9.85 gm%. Mean TLC count was found to be 10.96 per mm³. Goyal L et al detected frequency of anaemia in patients of Rheumatoid arthritis (RA) and to establish relationship between hemoglobin level and disease activity in RA. Fifty-nine patients of RA fulfilling 2010 ACR/EULAR criteria of RA having disease duration less than two years were included in the study. Haemoglobin (Hb) levels were measured. Disease activity was assessed by DAS-28 score. Among 40/59 (67.80%) anaemic cases, 22/40 (55%) patients had anaemia of chronic disease (ACD), 11/40 (27.50%) patients had Iron deficiency anaemia (IDA), 3/40 (7.5%) patients had vitamin B12 deficiency, 1/40 (2.50%) patient had folate deficiency and 3/40 (7.50%) patients had combined IDA and vitamin B12 deficiency. Duration of disease, rheumatoid factor positivity and occurrence of erosive disease were not significantly different among anaemic and nonanaemic patients. Mean ESR ($p > 0.02$) and DAS-28 were statistically significantly different among anaemic and nonanaemic patients. Haemoglobin level had significant negative correlation with disease activity (DAS28) in RA cases. Anaemia was seen in higher frequency in RA patients. Haemoglobin had significantly negative correlation with disease activity (DAS 28) in RA.¹²

In the present study proximal inter-pharyngeal joint involvement occurred in 87.5 percent of the patients. Meta-carp-pharyngeal joint involvement occurred in 70 percent of the patients. Wrist involvement and elbow involvement occurred in 65 percent and 50 percent of the patients. Anaemia was found to be present in 53.75

percent of the patients, while leucocytosis was found to be present in 15 percent of the patients. Thrombocytosis was found to be present in 26.25 percent of the patients. Getta HA et al assessed the prevalence of different types of anaemia and its correlation with the disease activity among patients with RA in Sulaymaniyah province and to determine the associated risk factors. A convenient sample of 100 rheumatoid arthritis patients was selected from patients seen in the rheumatology clinic. One hundred healthy voluntary controls of same age groups were selected and same parameters for diagnosis of anaemia are used in both groups. The prevalence of all types of anaemias among the rheumatoid Arthritis (RA) patients was 40% which more than that found in control group. The common types of anaemia was anaemia of chronic disease (28%), iron deficiency (10%), thalassemia minor (1%), and megaloblastic anaemia 1%. We found a significant correlation of RA with each low hemoglobin, low hematocrit, high leucocyte count and high ESR. Anaemia among RA patients in our study was significantly more prevalent among low socioeconomic status patients. The majority of RA patients had moderately or high active disease, which revealed no association between disease activity and anaemia (p value=0.3). The prevalence and types of anaemias among RA patients in Sulaymaniyah was comparable to that found in other studies and it was two times common than the normal healthy peoples.¹³

CONCLUSION

From the above results, the authors concluded that anaemia, thrombocytosis and leucocytosis are a common finding in rheumatoid arthritis patients. However; further studies are recommended.

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Source of Support: Nil. **Conflict of Interest:** None Declared.

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Cite this article as: Nikhil Sinha, Sanjiv Kumar Singh, M.S.I. Siddique. Analysis of Prevalence of Haematological Abnormalities among Rheumatoid Arthritis Patients at a Tertiary Care Hospital. *Int J Med Res Prof*. 2020 Mar; 6(2): 118-21.

DOI:10.21276/ijmrp.2020.6.2.027