A STUDY OF EXTRA-ARTICULAR MANIFESTATIONS OF RHEUMATOID ARTHRITIS
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ABSTRACT

BACKGROUND
Diseases of musculoskeletal system are among the most common human afflictions. Rheumatoid Arthritis (RA) is a systemic autoimmune disease of unknown etiology characterised by symmetric erosive arthritis and in some cases extra-articular involvement. Characteristic feature of RA is persistent inflammatory synovitis usually involving peripheral joints in a symmetric distribution.

The aim of the study is to study the extra-articular manifestations of Rheumatoid Arthritis (RA).

MATERIALS AND METHODS
50 cases who satisfied the criteria for diagnosis of RA laid down by the American Rheumatism Association Criteria were selected. They were studied for evidence of extra-articular manifestations by clinical, biochemical, radiological, echocardiographic and pulmonary function tests. Data was collected and analysis was made using various statistical parameters.

RESULTS
Among the 50 cases of RA studied, the disease was common in females and maximum incidence was seen between 30-39 years of age (30%). Morning stiffness, pain and swelling in the joints were the commonest presenting symptoms. The joints of the hand (70%) were the most commonly involved followed by wrist, knee, ankle and foot joints. In the present study, 28 (56%) had extra-articular manifestations with more incidence in males than females. The commonest one was anaemia (20%) followed by cardiac involvement (12%). Next, in the order of involvement were pulmonary, lymphadenopathy, vasculitis and rheumatoid nodule. Pericardial effusion was the most common cardiac finding followed by mitral regurgitation and aortic regurgitation. RA factor was positive in 33 (66%) cases. All the patients who had extra-articular manifestation had RA factor positive.

CONCLUSION
Although, rheumatoid arthritis was common among females, the extra-articular manifestations were common among males. Longer duration of disease and positive RA factor were associated with higher incidence of extra-articular manifestations. Currently, there are no reliable predictors for these features in early RA, although they are associated with men, more severe joint disease and worse function. Early recognition and appropriate treatment might limit the morbidity and lead to better outcomes.

KEYWORDS
Rheumatoid Arthritis, Extra-Articular Manifestations, RA Factor.


BACKGROUND
Diseases of musculoskeletal system are among the most common human afflictions.1 Rheumatoid Arthritis (RA) is a systemic autoimmune disease of unknown etiology characterised by symmetric erosive arthritis and in some cases extra-articular involvement. Characteristic feature of RA is persistent inflammatory synovitis usually involving peripheral joints in a symmetric distribution. The potential of the synovial inflammation to cause cartilage destruction and bone erosions and subsequent changes in joint integrity is the hallmark of the disease.2 Despite its destructive potential, the course of RA can be quite variable, some patients may experience only a mild oligoarticular illness of brief duration with minimal joint damage, whereas others will have a relentless progressive polyarthritis with marked functional impairment.

Although, RA is more common in females, extra-articular manifestations of the disease are more common in males. The extra-articular manifestations of RA can occur at any age after onset. It is characterised by destructive polyarthritis and extra-articular organ involvement, including
the skin, eye, heart, lung, renal, nervous and gastrointestinal systems.

Extra-articular organ involvement in RA is more frequently seen in patients with severe active disease and is associated with increased mortality. Early disability is one of the main predictors of extra-articular involvement.²

A better control of disease activity in the last decade due to the availability of more efficacious drugs has resulted in a lower frequency of extra-articular Manifestations of RA (ExRA) as well as better outcomes in many patients.³

Aims and Objectives- The aim was to study the extra-articular manifestations of Rheumatoid Arthritis (RA).

RESULTS
In the present study, maximum incidence of RA was between 30-39 years of age. Females were more affected than males. Morning stiffness, pain and swelling in the joints were the commonest presenting symptoms. The joints of the hand were the most commonly involved followed by wrist, knee, ankle and foot joints. Anaemia was the commonest extra-articular manifestation seen in 10 (20%) patients, which was normocytic normochromic type. Cardiac involvement was seen in 6 (12%) patients. Pericardial effusion (6%) was the most common finding followed by mitral regurgitation (4%) and aortic regurgitation (2%). Pulmonary involvement was seen in 4 (8%) patients who showed restrictive pattern on pulmonary function testing. Next, in the order of involvement was lymphadenopathy (8%), which was generalised. Vasculitis was seen in 4 (8%) patients, in which 3 had digital ischaemic ulcers and 1 had peripheral neuropathy. Rheumatoid nodule was seen in 1 (2%) patient, which was seen over dorsal aspect of the arm.

MATERIALS AND METHODS
50 cases of RA who are attending either the OPD or admitted to the wards of Akash Hospital over a period of 1 year (October 2016 - September 2017) were selected. The cases were diagnosed using ARA criteria 1987. All patients underwent clinical examination and the following investigations were done- Complete haemogram, ESR, RBS, RFT, RA factor, chest x-ray PA view, x-ray of the joints, 2D echo and PFT (wherever necessary).

The data was collected in a pretested questionnaire meeting the objective of the study. Analysis was made using various statistical parameters.

For classification purposes, a patient is said to have RA if he/she has satisfied at least 4 of the above 7 criteria. 1 through 4 must be present for at least 6 weeks.

Inclusion Criteria- Patients presenting with polyarthritis who satisfy the ARA 1987 criteria are included in the study.

Exclusion Criteria- Patients presenting with polyarthritis, but not satisfying the ARA criteria 1987 are excluded from the study.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Age Group (in years)</th>
<th>Sex</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>20-29</td>
<td>M</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>2.</td>
<td>30-39</td>
<td>M</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>3.</td>
<td>40-49</td>
<td>M</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>4.</td>
<td>50-59</td>
<td>M</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>5.</td>
<td>&gt;60</td>
<td>M</td>
<td>4</td>
<td>7</td>
</tr>
</tbody>
</table>

Table 1. ARA 1987 Criteria for Diagnosis of RA

RA factor was positive in 33 cases (66%). All the patients who had extra-articular manifestation were RA factor positive.

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Numbers</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morning stiffness</td>
<td>43</td>
<td>86</td>
</tr>
<tr>
<td>Pain and swelling in the joints</td>
<td>45</td>
<td>90</td>
</tr>
<tr>
<td>Fatigue/Muscular pain</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>Fever</td>
<td>19</td>
<td>38</td>
</tr>
</tbody>
</table>

Table 3. Presenting Symptoms at the Time of Admission

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Joints</th>
<th>Total No.</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Hands</td>
<td>35</td>
<td>70</td>
</tr>
<tr>
<td>2.</td>
<td>Wrist</td>
<td>27</td>
<td>54</td>
</tr>
<tr>
<td>3.</td>
<td>Knee</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>4.</td>
<td>Ankle</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>5.</td>
<td>Foot</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>6.</td>
<td>Elbow</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 4. Frequency of Joint Involvement at the Time of Presentation
Cardiac manifestations included pericardial effusion, followed by mitral regurgitation and aortic regurgitation, which is in concordance with study by Guedes et al\(^8\) and B C Sinha et al\(^9\).

The respiratory system involvement was noted in the form of interstitial lung disease, which revealed a restrictive pattern. M. Cojocaru reported that interstitial pulmonary fibrosis is seen in RA factor positive male patients with longstanding disease.

Subcutaneous nodule was seen in only one patient in our study in comparison with M. Cojocaru who reported up to 30% incidence in their study.

RA factor was positive in 33 patients in our study. All patients who had extra-articular manifestation were RA factor positive. Similar findings were noted in Wanchu et al study.

**CONCLUSION**

Although, the rheumatoid arthritis was common among females, the extra-articular manifestations were commonly seen in males. Longer duration of disease, positive RA factor and severe degree of anaemia were associated with higher incidence of extra-articular manifestations. Currently, there are no reliable predictors for these features in early RA, although they are associated with men, more severe joint disease and worse function. Early recognition and appropriate treatment might limit the morbidity and lead to better outcomes.

**REFERENCES**


