

Anemia In Recent Onset Rheumatoid Arthritis

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Abstract

This study was undertaken to study the prevalence of anemia in recent onset Rheumatoid arthritis and to observe any difference of disease activity between anemic and non anemic patients of Rheumatoid Arthritis(RA). Newly diagnosed recent onset RA (<2 years),DMARD naïve patients were evaluated for presence of anemia. Anemia was defined as hemoglobin = 11 g/dl in females and = 12 g/dl in males. Anemic patients were further evaluated for the type of anemia & serum ferritin = 50 µg/l is taken as cut off for defining iron deficiency anemia. Assessment of disease activity using DAS 28,and functional disability using modified health assessment questionnaires (MHAQ) was performed in both anemic and non anemic RA patients. A total of 31 patients were included in the prospective study. Anemia was observed in 20 patients (64.5%), out of the 20 patients, 12 patients (60%) were found to be having anemia of chronic disease(ACD)and 8 patients (40%) were found to be having iron deficiency anemia (IDA). In anemic group, the mean DAS 28 &MHAQ were found to be 6.85+0.64 & 1.41+0.44 respectively & in the non anemic group mean DAS 28 &MHAQ were found to be 4.76+1.29 & 0.7+0.25 respectively. It is concluded that anemia is a common extra articular manifestation of rheumatoid arthritis and anemia of chronic disease is the commonest type of anemia in rheumatoid arthritis . Anemic patients tend to have severe disease as reflected by high disease activity score and MHAQ scores.

Key Words

Rheumatoid arthritis, Anemia, Disease Activity

Rheumatoid arthritis (RA) is an autoimmune disorder of unknown etiology characterized by symmetric, erosive synovitis and, in some cases, extra articular involvement (1). Extra-articular manifestations can be detected in almost any organ system, causing considerable disease-related morbidity and interference with quality of life. Anemia is a frequently occurring extra-articular manifestation of RA, being mostly of the normochromic and normocytic type. Anemia is multifactorial, reflected in dimorphic appearance and wide red cell distribution width. Anemia of chronic disease (ACD) and iron deficiency anemia (IDA) are the most important types of anemia in RA patients. Frequently, anemia is of a mixed type, and differentiation between the two types is difficult and we need costly investigation like

estimation of soluble transferrin receptor ,or invasive procedure like bone marrow evaluation(2). The prevalence of anemia in RA ranges from 30-70% in different studies(3-5). In a cohort of 225 early RA patients, 64 per cent of them had an anemia of which 23 per cent was due to IDA and 77 per cent due to ACD(3).Another study from our country has reported prevalence of, anemia in 70.6% (anemia of chronic disease-ACD in 51.6%, IDA in 48.4%)(5) . Since there has been no reported studies on Anemia in RA from North Eastern India we have made an endeavor to study the prevalence of anemia in recent onset Rheumatoid arthritis and to observe any difference of disease activity between anemic and non anemic patients of RA.

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Material and Methods

Newly diagnosed recent onset RA (<2 years), DMARD naïve patients were clinically examined and necessary investigations were done including hemoglobin. Among patients with RA anemia was defined as hemoglobin = 11 g/dl in females and = 12 g/dl in males. Anemic patients were further evaluated for the type of anemia with iron profile, peripheral blood smear, reticulocyte count and any further investigation if required. Anemic patients with normal or high serum ferritin and low serum iron (<40 µg/dl) were classified as anemia of chronic disease(ACD) whereas patients with low serum ferritin with low serum iron were classified as iron deficiency anemia(IDA). Serum ferritin = 50 µg/l is taken as cut off for defining iron deficiency anemia. Patients were divided into two groups based on presence or absence of anemia and were assessed for their disease activity using DAS 28, and their functional disability using Modified Health Assessment Questionnaires (MHAQ). DAS 28 is a validated score for establishing disease activity and response to therapy in Rheumatoid arthritis as proposed by EULAR(European league against rheumatism). The DAS 28 is calculated from four parameters, (1).the number of swollen joints from a total of 28 joints, (2).The number of tender joints from a total of 28 joints (3). ESR and (4). Visual analogue score (VAS) for general health as subjectively estimated by patients.

Results

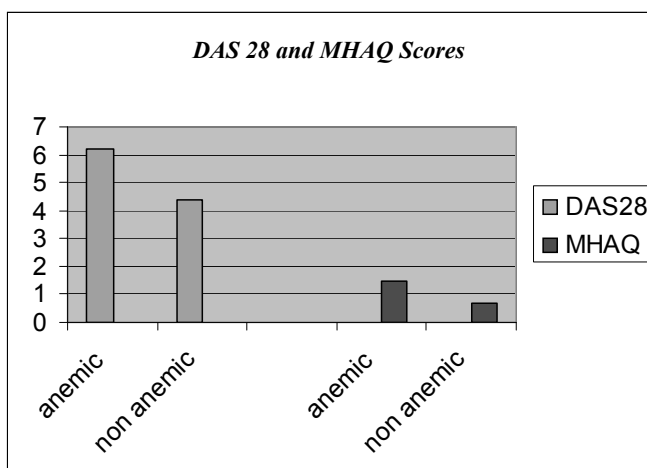
A total of 31 patients were included in the prospective study. Anemia was observed in 20 patients (64.5%), out of the 20 patients, 12 patients(60%) were found to be having anemia of chronic disease(ACD)and 8 patients (40%) were found to be having iron deficiency anemia (IDA).On examining peripheral blood smear of this anemic patients normocytic hypochromic anemia was observed in maximum patients i.e. 50%. The anemia was normochromic normocytic in 33.3%(n=4) and normocytic hypochromic in 66.66% (n=8) of those with anemia of chronic disease (ACD). The anemia was normocytic hypochromic in 25%(n=2) and hypochromic microcytic in 75%(n=6) of those with iron deficiency anemia. The mean hemoglobin in the anemic group was 8.285±2.245

and in the nonanemic group was 11.92±0.713. In the anemic group, mean hemoglobin in IDA is 6.46±2.49 and in ACD is 9.5±0.841

We also assessed for disease activity in both anemic and non anemic RA patients and we observed that there is significant difference in disease activity and functional disability between both groups. In anemic group, the mean DAS 28 & MHAQ were found to be 6.85±0.64 & 1.41±0.44 respectively & in the non anemic group mean DAS 28 & MHAQ were found to be 4.76±1.29 & 0.7±0.25 respectively. The disease variables in both group is given in Table 1.

Table 1: Disease Variables in Anemic & Non Anemic Groups

Disease variables	Anemic group	Non anemic group	P Value(unpaired t test)
Tender joint count	17.4±5.45	8.27±5.87	0.0002
Swollen joint count	9.75±3.78	4.09±2.66	0.0001
VAS(gen. Health)	60.50±12.45	29.09±15.78	0.001
DAS 28	6.85±0.64	4.76±1.29	0.0001
MHAQ	1.41±0.44	0.7±0.25	0.001
ESR	59.90±22.45	31.55±18.09	0.001
R.FACTOR +	18/20	6/11	0.05*



Discussion

This is one of first reported study of anemia in Rheumatoid arthritis from North-eastern India. In our study the overall prevalence of anemia in RA is 64% which is comparable to the other studies.(3-5)Iron deficiency anemia by our criteria was observed in 40% and anemia of chronic disease was observed in 60% of anemic subjects. This reflects the fact that though anemia of chronic disease is commonest type of anemia in RA



,but there is high prevalence of IDA compared to other studies (3,4). However high prevalence of IDA has also been reported by another Indian study (5)

In our study we took serum ferritin as a measure for distinguishing IDA from ACD, however this is not very specific especially in presence of inflammation and hence there is a possibility that few of the patient defined as IDA or ACD can have a mixed type of anemia(2). We also observed that maximum number of patients has normocytic hypochromic anemia instead of normocytic normochromic anemia and normocytic hypochromic anemia was observed in both anemia of chronic disease and in iron deficiency anemia. All these observations make us believe that most of the patients have a mixed type of anemia which is definitely a possibility considering the high incidence of iron deficiency anemia in our population.

We also observed that anemic patients have a severe disease as reflected by high disease activity score and MHAQ scores. This observation was also made in other studies(3,5).

Thus it can be said in conclusion that anemia is a common extra articular manifestation of Rheumatoid arthritis and anemia of chronic disease is the commonest type of anemia in Rheumatoid arthritis, however there is a high prevalence of iron deficiency anemia in RA in this part of country. Anemic patients tend to have severe disease as reflected by high disease activity score and MHAQ scores and thus there may be justification at early and aggressive treatment in this group of patients.

References

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