Research Article

CLINICAL PROFILE OF NEW ONSET RHEUMATOID ARTHRITIS IN A TERTIARY CARE CENTRE IN NORTH KERALA

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ABSTRACT

Rheumatoid arthritis is prevalent in 1 % of world population. The present study is a prospective study conducted in a tertiary care centre on the clinical profile of rheumatoid arthritis. Polyarthritis involving small joints of the hand was found to be the most common presenting complaint. There was no definite family history. There was found to be a strong association between smoking and RA. The radiological parameters and blood parameters were also studied.

INTRODUCTION

Rheumatoid arthritis (RA) is a chronic inflammatory Disease of unknown cause which mainly affects the synovium. It is one of the most common inflammatory joint disease. There may be involvement of multiple organs and extra articular systems in rheumatoid arthritis. It can be considered as a spectrum of diseases that begins many years before the onset of clinical symptoms.

Aim

To study the complete clinical profile of newly diagnosed patients (within 2 yrs) with rheumatoid arthritis attending outpatient sections and wards for a period of 3 years (2011-2014).

It was a prospective study for a period of 3 yrs from Sept 2011-aug 2014 at Rheumatology OP, Medicine OP, Department of Medicine wards of Dept of general Medicine, Govt Medical College, Calicut

Sample size

Sample size was calculated based on the formula 4PQ/D2, where P=prevalence from previous studies Q=100-p, D=Allowable error(5-20% of P), Prevalence=62, hence SAMPLE SIZE=66

Inclusion criteria

All newly diagnosed treatment naïve patients (within 2yrs) with rheumatoid arthritis whose age is more than 18yrs diagnosed according to the new ACR-EULAR criteria

Exclusion criteria

Patients with history suggestive of polyarthritis due to other causes including mixed connective tissue disorders

Data collection

After noting the preliminary data of the patient a complete history was taken which included the mode of onset, preceding history of infection, pattern of joint involvement, duration of symptoms, extra articular manifestations, past history, family history and personal history. A complete general examination as well as detailed systemic examination was done in all the patients. Locomotor system examination was done to know the pattern of joint involvement and the presence of signs of inflammation. Complete blood count, haemoglobin, ESR, urine routine, liver and renal function tests as well as fasting blood sugar were done in all the patients.
Serum rheumatoid factor was done in all the patients. Anti CCP antibody was done in patients when indicated. Interpretation of results were done by another person who did not know the final results of previous studies. The significance of the mode of onset, sex difference, effect of smoking, the presence of extraarticular manifestations and the severity of disease as well as its relation to vitamin D level was studied using appropriate statistical tests. Here we used SPSS package for statistical analysis.

RESULTS

There were a total of 60 cases (48 females and 12 males) and samennumber of age and sex matched controls were taken. The male:female ratio is 1:4.

Age distribution

The mean age of the cases was 48.38 yrs and that of controls were 48.35 yrs. The difference being not statistically significant. The majority of cases were in the 20-50 age group 60% (36) and the rest (24 patients) were in 50 to 70 age group (fig 5.2).

Family History

No family history of consanguinity was seen in any of the patients. Also there were no first and second degree relatives of patients with RA.

Dietetic history

The dietary pattern of the patients and controls were studied to know the link between any particular dietary pattern and the rheumatoid arthritis. All the patients were taking a mixed diet. None of them were taking a pure vegetarian diet and none of them were having food faddism.

Addictions

Smoking has been seen to increase the incidence of rheumatoid arthritis. But in our study group majority 80% (48 out of 60 pts) were females who were non-smokers. All the 12 males were smokers.

All the 12 males with RA (20%) were smokers. Of them 3 who had duration of smoking >20 pack yrs had severe RA.

Clinical presentation

In our present study the major clinical feature was pain in the joints which was seen in all of patients and morning stiffness which was also seen in all the patients 39 of the 60 patients (65%) presented as polyarthritis. 13 patients (21.7%) presented as oligoarthritis and it was striking that 8 patients (13.3%) presented as monoarthritis. On general examination rheumatoid nodules were present in 11 of the patients (18.3%).

Sicca complex in the form of dry eyes were seen in 6 patients (10%). The commonest joint involved was proximal interphalangeal and metacarpophalangeal joint (82%). The joint deformities noted were boutonniere deformity in 10%ie 6 patients, ulnar deviation in 12 cases (20%). The lower limb deformities were plantar subluxation of metatarsal heads in 3 patients (5%of the patients) and hallux valgus in 4 cases (8%).

Haemoglobin values:

The mean hemoglobin level was 9.88 gm% in cases and 12.14 gm% in controls, the difference being statistically significant with a p value of 0.001. The anemia was further evaluated and 38 patients were having hypochromic microcytic anemia and rest was normochromic normocytic anemia. Among the patients 56.7% (34 number) had a very low hemoglobin below 10 gm% whereas 81.7% (49) controls had a normal hemoglobin above 12 gm%.

ESR values

The mean ESR was 81.70 mm/hr in cases and 29.70 mm/hr in controls the difference being statistically significant with a p value of <0.0001. A very high ESR of >100 mm/hr was seen in 12 patients and only 1 control. An ESR between 60 and 100 mm/hr was seen in 33 patients and 1 control, while a low ESR of less than 60 mm/hr was seen in 15 patients and 58 controls.

Rheumatoid factor

The serum rheumatoid factor was positive in 41.7% (25 out of 60) patients. But it had no correlation with severity as assessed by DAS score. All the 12 males who were smokers had a positive rheumatoid factor.

The commonest radiological abnormality noted was soft tissues swelling 82% (48 patients) followed by periarticular osteopenia in 44 cases (74%).

DAS score

The severity of the rheumatoid arthritis was assessed using DAS 28 score. DAS score of >5.2 was seen in 9 patients (16%) indicating severe rheumatoid arthritis and DAS score of 3.2-5.1 was seen in 51 patients (85%).

DISCUSSION

In the present study which included 60 patients majority were females. It is a frequently noted finding that most autoimmune diseases are more commonly seen in females. The most important cause for this is thought to be sex hormonal influences. It is believed that cross talk between toll like receptors (TLR4) and T cell immunoglobulin signaling determines the severity of inflammation and it is found that it is more in females and that could be one reason why autoimmune diseases are more common in females.

Most of the patients were in the 20 to 50 age group. This is in accordance with most of the studies on clinical profile of rheumatoid arthritis. The study by Pradnya M Digikar et al and many others show similar age wise distribution of cases of rheumatoid arthritis. Ester E Pensegra who studied 260 philippino patients also found that mean age of the patients were about 44 yrs.

In the present study there were no cases with a positive family history. This shows that environmental factors must be playing a major role in the development of RA. Some studies done before had shown that the risk of developing rheumatoid arthritis is four times higher in first degree relatives of affected patients compared to those who do not have affected first degree relatives. In a study of 303 first degree relatives of RA patients Smolik et al found that first degree relatives of
rheumatoid patients had more chances of joint symptoms than those having no family history. This could suggest that there is a possible genetic influence on the development of rheumatoid arthritis. The results of the present study are in contrast to most of the previous studies which have proven a strong familial history in RA patients. Even such a familial occurrence could be due to sharing the same diet, lifestyle and environment.

Diet is not a well-studied topic in rheumatoid arthritis. The effect of the diet following by a one-year vegetarian diet trial was done by J Kjeldsen-Kragh et al and it was found that there was a significant improvement in the number of tender joints, Ritchie's articular index, number of swollen joints, pain score, duration of morning stiffness, grip strength, erythrocyte sedimentation rate, C-reactive protein, white blood cell count, and a health assessment questionnaire score. In the present study all the patients were taking a mixed diet while two controls were pure vegetarians but no significant relation could be found between specific diet and the onset of symptoms. But an adetailed study on diet was not attempted in the patients and that is an important shortcoming of the study. Hence no definite conclusion could be reached. All the males (20%) of them who had a hadduration of smoking >20 yrs had severe RA. 11 males who were smokers also had positive rheumatoid factor. Severe smoking is associated with more severe RA. Of the 12 males all the three males who had a smoking history of more than 20 yrs had more severe RA. Stroll et al. after a population based case-control study on incident cases proposed that smokers among both sexes had high incidence of sero positive RA.

The most important clinical feature was pain in joints which was seen in 100% of patients followed by morning stiffness which was also seen in 100% of patients. This is similar to most of the other studies. 65% (39) of the patients presented as polyarthritis which is the most described presentation of rheumatoid arthritis. Oligoarthritis was seen in 27% patients. Grassi et al. reported that the commonest triad of symptoms includes pain in the joint, joint swelling and motion impairment. But it was striking that 8 (13.3%) patients presented as monoarthritis. Suresh et al. describes monoarthritis as a mode of presentation in rheumatoid arthritis. In such cases a complete history along with relevant investigations are needed to make a diagnosis. Hand joints were the most common joints involved in rheumatoid arthritis. Pradnya M et al. reports proximal interphalangeal joints and metacarpophalangeal joint as the most common joints involved in rheumatoid arthritis. Jacoby et al. also reported that in their study on 100 patients, the most commonly involved joints were metacarpophalangeal joints, wrist joint, and proximal interphalangeal joints. In the present study 11 (18.4%) of the patients had rheumatoid nodules and it was the most common extraarticular manifestation. Manoel Barros Bertolob Mario do et al. also reported that the incidence of rheumatoid nodules as 19.4%. In Turkey a single centre study done by calgue et al. found 56 rheumatoid nodule as the most common extraarticular manifestation. Siccocomplex was seen in 6% of our patients which is much less than that reported by Drosso et al which is 49%. Extra articular manifestations are less common in the study population.

Anemia with a haemoglobin level of <10gm% was seen in majority of the cases (34 (56.7%) patients when compared to controls (2 patients/3.3%). The most common type of anemia was hypochromic microcytic anemia followed by normochromic normochromic anemia. None of the patients had macrocytic anemia even though almost all of them were on methotrexate. There has been many studies on the hematological abnormalities in RA and it has been found that anemia is the most common. The most common cause of anemia is anemia of chronic disease followed by iron deficiency anemia, and less common causes like haemolytic anemia and anemia of chronic disease. Here adetailed study of anemia was not done except for a peripheral smear.

Elevated ESR which is a marker of inflammation was seen in almost all the patients. A very high ESR of >100mm/hr was seen in 12 patients and only 1 control. An ESR between 60 and 100 mm/hr was seen in 33 patients and 1 control, while a low ESR of less than 60mm/hr was seen in 15 patients and 58 controls.

Majority of the controls (58 out of 60) were having a low ESR <60mm/hr. ESR is an age old marker of inflammation whose estimation is cheap and easily available. An elevated ESR strongly correlates with activated disease as indicated by the relationship between ESR and DAS score. Even though there are more and more newer inflammatory markers and many trials have shown a poor correlation between ESR and disease activity ESR may still be used as an inflammatory marker in resource poor settings.

Rheumatoid factor is one of the most important investigatory finding in rheumatoid arthritis. It was positive in 35 (58.3%) patients. All the 12 males who were smokers had a positive rheumatoid factor. Akil et al. have reported that 80% of patients with rheumatoid arthritis are seropositive for rheumatoid factor but our study reports are similar to reports by Veeparen et al. who states that positive RF rates are 65%, 62%, and 60% in English, Malaysian, and Kuwaiti patients, respectively. X-ray of the involved joints were taken in all the patients and it was noted that the commonest radiological abnormality noted was soft tissue swelling in 82% of patients followed by periarticular osteopenia in 44 cases. All the patients were in the initial stages of RA and none of them had a duration more than 2 years. X-ray cannot detect early RA. But more advanced imaging methods like MRI and ultrason sound could not be used in patients due to financial limitations. Joint erosions are one of the late markers of RA. As such radiological imaging has no role in diagnosis of RA, because mostly it is a clinical diagnosis.

CONCLUSION

Rheumatoid arthritis is predominantly seen in females. Environmental factors are more important than genetic factors inciting the disease, positive family history was absent in the study population. Smoking could play an etiological role in development of disease. And chronic smokers have severe rheumatoid arthritis. Rheumatoid factor need not be positive in all the patients and its positivity does not correlate with the
severity of the disease. ESR level correlates with disease severity.

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