Original Research Paper

Volume - 11 | Issue - 05 | May - 2021 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

General Medicine

TO STUDY OF DELAY IN MEDICAL HELP-SEEKING IN CASES OF RHEUMATOID ARTHRITIS- ITS IMPACT ON CURRENT CLINICAL STATUS AND REASONS FOR THE SAME

Dr. Asif Shaikh Assistant professor,Dept. of General Medicine Topiwala National Medical College and BYL Charitable hospital, Mumbai.

Dr. Seema H. Kini* Associate professor, Dept. of General Medicine Topiwala National Medical College and BYL Charitable hospital, Mumbai. *Corresponding Author

Dr. Krutika Kale Assistant professor, Dept. of General Medicine Topiwala National Medical College and BYL Charitable hospital, Mumbai.

ABSTRACT **BACKGROUND-** Rheumatoid arthritis (RA) is a form of inflammatory polyarthritis which mostly affects the small diarthrodial joints of the hands and feet in a symmetrical pattern.[1] At present, potent disease-modifying antirheumatoid drugs (DMARDs) and biologic agents are available to treat RA. It has been unequivocally demonstrated that early initiation of aggressive treatment schedules results in less joint damage and disability.

METHODS- observational cross sectional study in tertiary care hospital for duration of 18 months. Sample size -40

RESULTS- From among 40 patients, 14 (35%) of patients represented stable illness trajectories, 07 (17.5%) represented oscillating trajectories and remaining 19 (47.5%) represented deteriorating trajectories. Methotrexate was given to 65% patients, Sulfasalazine in 55%, Chloroquine/Hydroxychloroquine in 42.5%, NSAIDs in 57.5%, Analgesics in 72.5% patients and steroids in 47.5% of patients. There was statistically significant associations between patient's delay with total delay as well as between Primary Doctor's delay and total delay ($p<0.05$).

CONCLUSION- Patient dependent factors, leading to a delay in consulting primary care physicians, are the principal reasons for the delay in patients with Rheumatoid Arthritis in our population. Earlier the therapy is introduced the better will be the clinical outcome.

KEYWORDS : DAS28 score , SDAI ,CDAI , HAQ

INTRODUCTION-

Rheumatoid arthritis (RA) is a form of inflammatory polyarthritis which mostly affects the small diarthrodial joints of the hands and feet in a symmetrical pattern.[1] It is an autoimmune disease with a chronic course characterized by an unknown aetiology and polyarthritis in the peripheral parts.[2,3]

The worldwide prevalence of RA is approximately 0.8% with a range of 0.3%-2.1%.

RA is mostly diagnosed between the age of 30-50 years, with more than 75% patients developing the disease in this age group.[1] The prevalence of RA shows increasing incidence with increasing age until around 55 years after which its prevalence plateaus till 75 years and then starts declining with advancing age.[3] In India, its prevalence is around 0.5% to 0.75%.

Rheumatoid arthritis tends to have a fluctuating course with an increase and decrease in activity. Standard disability index of the health assessment questionnaire (HAQ) gives a detailed knowledge about specific functional disability.[2]

Disease activity should be evaluated initially and at all subsequent visits.

Following scores can be used

· Disease Activity Score derivative for 28 joints (DAS28)
· Simplified Disease Activity Index (SDAI)
· Clinical Disease Activity Index (CDAI) [2]

At present, potent disease-modifying antirheumatoid drugs (DMARDs) and biologic agents are available to treat RA. It has been unequivocally demonstrated that early initiation of aggressive treatment schedules results in less joint damage and disability. Indeed, it has been demonstrated that initiation of treatment within 12 weeks after disease onset results in lower levels of joint destruction and increases the chance of achieving remission.[1] In the present study, we assessed the association between various factors and delay in medical help-seeking in rheumatoid arthritis patient.

METHODOLOGY-

Sample size- 40
Study Design- observational cross sectional study.
Duration of study: 18 months
Setting- Tertiary Care Hospital

Inclusion criteria-

- All diagnosed cases of RA according to 2010 ACR RA classification criteria (Irrespective of disease activity –active disease or in remission Whether, on treatment or drug naïve or newly diagnosed)
- Attending Rheumatology clinic at our tertiary care hospital

Exclusion criteria-

- Patients not willing to give an informed consent.
- Poor recall on how much delay has occurred in the initiation of DMARD treatment

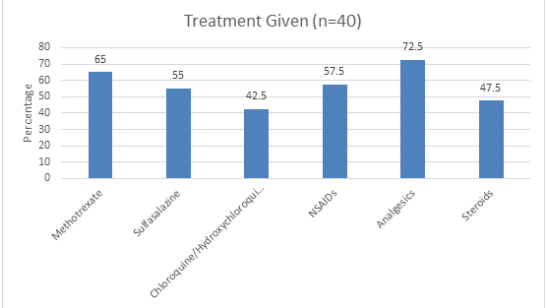
Statistical Analysis:

Study population will be described by descriptive statistics**,** Correlation between delay in initiating DMARDS and Disease activity will be done by Pearson's correlation Coefficient**,** Association between delay and deformities by Chi square test

RESULTS-

1. The study group mostly comprised of females i.e. 36 (90%) and 04 (10%) were males. The mean age of the study subjects was 43.75 years (SD 8.88).
2. Majority i.e. 25 (62.5%) of patients belonged to Lower class of Socioeconomic classification followed by 09 (22.5%) to Upper lower class, 07 (7.5%) Lower middle class and 02 (5.0%) to Upper middle class.
3. From among patients, 14 (35%) of patients represented stable illness trajectories, 07 (17.5%) represented oscillating trajectories and remaining 19 (47.5%) represented deteriorating trajectories.

4. GRAPH 1. Treatment given for relieving symptoms



Methotrexate was given to 26 (65%) of patients, Sulfasalazine to 22 (55%), Chloroquine/Hydroxychloroquine to 17 (42.5%), NSAIDs to 23 (57.5%), Analgesics were given to 29 (72.5%) and steroids to 19 (47.5%) of the patients.

5. Table 1. DAS 28 ESR SCORE, CDAI SCORE & HAQ-DI SCORE

Sr. No.	Score	Mean ± SD	Range	Median
1.	DAS 28 ESR Score	03.67 ± 1.07	0.8-6.4	4.1
2.	CDAI Score	11.49 ± 5.78	0-49	11
3.	HAQ-DI Score	2.11 ± 0.69	0.33-3	2

We found mean of DAS 28 ESR score, CDAI score, HAQ-DI score was 3.67, 11.49, 2.11 respectively. Range of three scores were 0.8- 6.4, 0- 49 and 0.33- 3 respectively. Median of same were 4.1, 11 and 2 respectively.

6. TABLE 2. Delay in diagnosis & treatment:

Sr. No.	Delay	Mean ± SD	Range	Median
1.	Delay at patient's level	54.78 ± 49.25	2-253	20
2.	Delay at Primary Doctor's level	18.32 ± 16.32	0-124	12
3.	Delay in DMARDs	07.52 ± 5.76	0-23	6.5
4.	Total Delay	80.66 ± 55.55	5-286	55

Table 2 showed that delay at level of patients was most commonly seen observation leading to delayed treatment with mean delay of 54.78 weeks. Mean delay at primary Doctor's level and DMARDs were18.32 and 7.52 weeks. Total delay from appearance of symptoms to treatment was 80.66 weeks.

7.TABLE 3. Association of patient's delay with various variables

Variables	Patient's Delay			p-value
	< 8 weeks	9-16 weeks	>16 weeks	
1) Age Group				
< 40 years	03	06	10	0.85
> 40 years	02	05	14	
2) Gender				
Male	02	00	02	<0.05
Female	03	11	21	
3) Socioeconomic status				
Lower	03	08	12	0.83
Lower Middle	00	00	01	
Upper Lower	02	02	08	
Upper Middle	00	01	03	
4) DSA 28 ESR				
Remission	01	01	03	0.06
Low	00	05	07	
Moderate	01	05	11	
High	03	00	03	
5) CDAI Score				
Remission	01	03	03	0.312
Low	01	05	04	
Moderate	03	03	14	
High	00	00	03	
6) HAQ-DI				
Mild Difficulties to Moderate Disability	01	01	03	0.87
Disability Moderate to severe Severe to Very Severe Disability	02	04	12	
	02	06	09	

*p-value obtained through Pearson's Chi-square test.

Table 3 showed that for above variables > 16 wks delay was most common but p-value for above variables was not found to significant except for gender where majority of females had delay of more than 16 weeks, which was statistically significant association (p<0.05)

8.TABLE 4. Association of primary doctor's delay with various variables:

Variables	Primary Doctor's Delay			p-value
	< 8 weeks	9-16 weeks	>16 weeks	
1) Age Group				
< 40 years	09	08	02	0.53
> 40 years	08	08	05	
2) Gender				
Male	01	02	01	0.838
Female	16	14	06	
3) Socioeconomic status				
Lower	10	10	03	0.774
Lower Middle	00	01	00	
Upper Lower	06	04	02	
Upper Middle	01	01	02	
4) DSA 28 ESR				
Remission	01	03	01	0.650
Low	03	07	02	
Moderate	11	03	03	
High	02	03	01	
5) CDAI Score				
Remission	01	03	03	0.096
Low	05	04	01	
Moderate	10	08	02	
High	01	01	01	
6) HAQ-DI				
Mild Difficulties to Moderate Disability	01	02	02	0.224
Disability Moderate to severe Severe to Very Severe Disability	11	05	02	
	05	09	03	

*p-value obtained through Pearson's Chi-square test.

Table 4 showed that association between primary Doctor's delay with above variables showed that p-value was not significant.

9. TABLE 5. Association of DMARDS delay with various variables:

Variables	DMARDs Delay			p-value
	< 8 weeks	9-16 weeks	>16 weeks	
1) Age Group				
< 40 years	12	06	01	0.582
> 40 years	15	04	02	
2) Gender				
Male	17	12	04	0.297
Female	70	36	11	
3) Socioeconomic status				
Lower	17	05	01	0.978
Lower Middle	01	00	00	
Upper Lower	07	03	02	
Upper Middle	02	02	00	
4) DSA 28 ESR				
Remission	04	01	00	0.032* (Significant)
Low	09	03	00	
Moderate	13	02	02	
High	01	04	01	
5) CDAI Score				
Remission	04	02	01	0.052
Low	07	03	00	
Moderate	15	04	01	
High	01	01	01	
6) HAQ-DI				
Mild Difficulties to Moderate Disability	03	02	00	0.278
Disability Moderate to severeSevere to Very Severe Disability	11	04	03	
	13	04	00	

*p-value obtained through Pearson's Chi-square test.

Table 5 showed that association between DMARDs delay and DSA 28 ESR score was significant (p= 0.032). Association between DMARDs delay and other variables were not significant.

10.TABLE 6. Association of total delay with various variables:

Variables	Total Delay		p-value
	< 1 year	> 1 year	
1) Age Group			
< 40 years	10	09	0.441
> 40 years	07	14	
2) Gender			
Male	03	01	0.793
Female	14	22	

3) Socioeconomic status			
Lower	12	11	0.702
Lower Middle	01	00	
Upper Lower	04	08	
Upper Middle	00	04	
4) DSA 28 ESR			
Remission	02	03	0.902
Low	06	06	
Moderate	11	06	
High	03	03	
5) CDAI Score			
Remission	03	04	0.158
Low	05	05	
Moderate	09	11	
High	00	03	
6) HAQ-DI			
Mild Difficulties to Moderate Disability	01	04	0.169
Disability Moderate to severe	07	11	
Severe to Very Severe Disability	09	08	

*p-value obtained through Pearson's Chi-square test.

Table 6 showed that statistical association between Total delay and above variables were not found to be significant.

11. TABLE 7. Association of total delay with patient's delay, primary doctor's delay & DMARDS delay:

Variables	Total Delay		p-value
	< 1 year	> 1 year	
1) Patient's Delay			
<8 weeks	05	00	<0.05*(Significant)
9-16 weeks	08	03	
>16 weeks	04	20	
2) Primary Doctor's Delay			
<8 weeks	09	08	<0.05*(Significant)
9-16 weeks	08	08	
>16 weeks	00	07	
3) DMARDs Delay			
<8 weeks	10	17	0.133
9-16 weeks	07	03	
>16 weeks	00	03	

Table 7 showed that association between Patient's delay and Total delay was statistically significant ($p<0.05$). Similarly, we also found a statistically significant association between Primary Doctor's delay and total delay ($p<0.05$). There was no such association between DMARDs delay and total delay.

DISCUSSION:

This study was undertaken to assess association between various factors and delay in medical help-seeking in rheumatoid arthritis patient of our hospital.

Mean age of patients was 43.75 years (SD 8.88). Similar results seen in study conducted by B. Siddhartha Kumar et al[4] (mean age 42.1±11.6). Most of participants in our study were females 90%. Similar results seen in study conducted by Kumar et al in which 62% patients were females[5].

Most of patients from our study i.e. 25 (62.5%) belonged to Lower class followed by 09 (22.5%) Upper lower class. In study conducted by Suzzane M. et al,[6] it was observed that, people from lower Socioeconomic scale are more likely to smoke, have higher BMI, more deficient in certain micronutrients and have chronic diseases, such as asthma and diabetes. These factors have been associated with Rheumatoid Arthritis and should be considered when investigating the risk of developing Rheumatoid Arthritis. Also these people could have delayed presentation to clinical practice, limited access to health care and limited prescription of expensive drugs in some countries, which is dependent on health care insurance plans[5].

In our study, 14 (35%) of the patients represented stable illness trajectories, which is presence of disease but it is not perceived as such. As symptoms are not considered serious, they are normalized. 07 (17.5%) patients represented oscillating trajectories, in which disease fluctuates between phases of activity and improvement until persistence of symptoms produces disability. This leads to use of alternative or folk treatments and prompts to seek information and advice from social network. The remaining 19 (47.5%) i.e. most of patients represented deteriorating trajectories, where impairment predominates over improvement which interfere with their work and daily activities.

Methotrexate was given to 65% patients, Sulfasalazine in 55%, Chloroquine/Hydroxychloroquine in 42.5%, NSAIDs in 57.5%, Analgesics in 72.5% patients and steroids in 47.5% of patients. Similar study on various treatment modalities for Rheumatoid Arthritis is done by Bullock J et al[7], where there is mention of NSAIDs and Corticosteroids as first line medications against Rheumatoid Arthritis and DMARDs as second line treatment modalities .

Delay at level of patients was most commonly seen observation leading to delayed treatment with mean delay of 54.78 weeks. Mean delay at primary Doctor's level and DMARDs were 18.32 and 7.52 weeks. Total delay from appearance of symptoms to treatment was 80.66 weeks. In a similar study conducted by Ison M. et al,[8] Median overall delay from symptom onset to rheumatology review was 26.4 weeks. Patient delay (8.7 weeks) was the longest delay and predicted overall delay. 11.4% (n=10) of patients were seen within the frequently cited 12 weeks window post symptom-onset and 17% (n=14) within a more conservative 16 weeks. Patient delay was increased by socioeconomic disadvantage. Patients seen within 16 weeks had greater improvement in DAS28 and probability of remission at 6 months.

We observed for statistical association between patient's delay, primary Doctor's delay, DMARDs Delay and Total delay with various variables such as Age group, Gender, Socioeconomic status, DSA 28 ESR, CDAI Score and HAQ-DI score. P value for most of above variables were not significant. However, p-value for association between patient's delay with gender of the patients ($p<0.05$) and between DMARDs delay & DSA 28 ESR score was found to be significant ($p= 0.032$).

We also searched for association between Patient's delay, Primary Doctor's delay and DMARDs delay with the total delay. There was statistically significant associations between patient's delay with total delay as well as between Primary Doctor's delay and total delay ($p<0.05$). Patient having delay more than 16 weeks will eventually lead to a total delay of more than 1 year between diagnosis and treatment. There was no such association between DMARDs delay and total delay. Thus it can concluded that, patient's delay and Primary Doctor's delay was primarily responsible for delayed diagnosis and treatment of Rheumatoid Arthritis patients in our study.

The major limitation of the present study was that it was a hospital-based study. Therefore, the observations from the present study might not reflect the scenario in the community.

CONCLUSION –

Patient dependent factors, leading to a delay in consulting primary care physicians, are the principal reasons for the delay in patients with Rheumatoid Arthritis in our population. Earlier the therapy is introduced the better will be the clinical outcome. Consequently it is important to understand why some patients with RA delay in seeking medical advice, in order to allow effective interventions to reduce this delay.

REFERENCES –

1. van der Linden MP, Le Cessie S, Raza K, van der Woude D, Knevel R, Huizinga TW, van der Helm.van Mil AH. Long.term impact of delay in assessment of patients with early arthritis. Arthritis & Rheumatism. 2010 Dec;62(12):3537-46.
2. Wick MC, Lindblad S, Klareskog L, Van Vollenhoven RF. Relationship between inflammation and joint destruction in early rheumatoid arthritis: a mathematical description. Annals of the rheumatic diseases. 2004 Jul 1;63(7):848-52.
3. Welsing PM, Landewé RB, Van Riel PL, Boers M, Van Gestel AM, Van Der Linden S, Swinkels HL, Van Der Heijde DM. The relationship between disease activity and radiologic progression in patients with rheumatoid arthritis: a longitudinal analysis. Arthritis & Rheumatism: Official Journal of the American College of Rheumatology. 2004 Jul;50(7):2082-93.
4. Kumar BS, Suneetha P, Mohan A, Kumar DP, Sarma KV. Comparison of Disease Activity Score in 28 joints with ESR (DAS28), Clinical Disease Activity Index (CDAI), Health Assessment Questionnaire Disability Index (HAQ-DI) & Routine Assessment of Patient Index Data with 3 measures (RAPID3) for assessing disease activity in patients with rheumatoid arthritis at initial presentation. The Indian journal of medical research. 2017 Nov;146(Suppl 2):S57.
5. Kumar K, Daley E, Carruthers DM, Situnayake D, Gordon C, Grindulis K, Buckley CD, Khattak F, Raza K. Delay in presentation to primary care physicians is the main reason why patients with rheumatoid arthritis are seen late by rheumatologists. Rheumatology. 2007 Sep 1;46(9):1438-40.
6. Suzanne M. M. Verstappen, The impact of socio-economic status in rheumatoid arthritis,

Rheumatology, Volume 56, Issue 7, July 2017, Pages 1051– 1052, [Internet] Available from, https://doi.org/10.1093/rheumatology/kew428 [accessed on October 12, 2019].
7. Bullock J, Rizvi SA, Saleh AM, Ahmed SS, Do DP, Ansari RA, Ahmed J. Rheumatoid arthritis: a brief overview of the treatment. Medical Principles and Practice. 2018;27(6):501-7.
8. Ison M, Duggan E, Mehdi A, Thomas R, Benham H. Treatment delays for patients with new.onset rheumatoid arthritis presenting to an Australian early arthritis clinic. Internal medicine journal. 2018 Dec;48(12):1498-504.