



Rheumatology

CORRELATION BETWEEN DEMOGRAPHIC FACTORS, CLINICAL VARIABLES, BIOCHEMICAL PARAMETERS AND PHYSICAL DOMAIN SCORE OF QUALITY OF LIFE IN PATIENTS WITH RHEUMATOID ARTHRITIS: A PROSPECTIVE OBSERVATIONAL STUDY IN A TERTIARY CARE HOSPITAL.

Dr Shahbaz Khan Senior Resident Deptt. Of Medicine GMC Jammu.

Dr Annil Mahajan* Prof. And Head Deptt. Of Medicine GMC Jammu. *Corresponding Author

Dr Vishal Tandon Asstt. Prof. Deptt. Of Pharmacology GMC Jammu.

ABSTRACT **BACKGROUND:** Rheumatoid arthritis is a systemic disease characterised by inflammation the principal hallmark of which is symmetric polyarthritis with main involvement of the small joints in hands and feet. In this prospective study a total of 110 patients were taken and correlation was drawn between Demographic Factors, Clinical Variables, Biochemical Parameters and Physical Domain Score of quality of life in patients with rheumatoid arthritis.

MATERIALS AND METHODS: In this prospective study conducted over one year a total of 110 patients who were diagnosed cases of rheumatoid arthritis were observed and correlation between demographic Factors, Clinical Variables, Biochemical Parameters and Physical Domain Score of quality of life in patients with rheumatoid arthritis was found out. Inclusion of patients was done of those patients who fulfilled ACR/EULAR criteria for diagnosing rheumatoid arthritis.

RESULTS: In this prospective study of 110 patients it was found that there was a negative correlation between demographic Factors, Clinical Variables, Biochemical Parameters and Physical Domain Score of quality of life in patients with rheumatoid arthritis which was of statistical significance.

CONCLUSIONS: The current study vindicates the fact that there is a very significant negative correlation between physical QOL and various demographic and clinical, biochemical parameters which needs to be addressed so as to have a better QOL in patients with rheumatoid arthritis.

KEYWORDS : rheumatoid arthritis, depression, quality of life, physical QOL.

INTRODUCTION

RA is a potentially debilitating disease causing persistent pain, depression or other psychosocial distress, poor physical function, reduced quality of life (QoL) and increased medical and social costs **Scott et al, 2005(1)**. Rheumatic diseases have a major impact on both the individuals with the disease and the society in terms of economic, social, and psychological burden. Most rheumatic diseases are associated with high levels of pain and reduced physical function. Rheumatoid arthritis, one of the very important rheumatic disorders, has been shown to have alarming increase in its prevalence in worldwide studies and is known to cause physical, social and economic burden **Malviya et al, 1994(2); Chopra et al, 2001(3); Mahajan et al, 2003(4)**. Waxing and waning nature of disease, long duration of treatment along with requirement of extensive periodic biochemical monitoring of treatment in RA, may have negative impact on patient compliance and even have high levels of treatment dissatisfaction. These factors further affect the quality of life negatively and overall treatment outcome. All this is further expected to get enhanced if proper counselling about disease and early treatment is not done in patients of RA. Reduced physical function and persistent pain are serious consequences of rheumatoid arthritis (RA). Clinical trials have shown that patients with RA suffer from a poor health-related quality of life (HR-QoL). However, limited information is available on the HR-QoL of patients treated in normal clinical practice. The purpose of the present study is to obtain information of how RA can influence on the patients' HR-QoL and functional ability in a clinical setting and to draw correlation between physical domain of QOL and various variables as mentioned.

METHODS AND MATERIALS :

The present prospective observational and cross-sectional one point analysis study entitled "**Correlation between Demographic Factors, Clinical Variables, Biochemical Parameters and Physical Domain Score of quality of life in patients with rheumatoid arthritis: A prospective observational study in a tertiary care hospital**" was conducted from Nov. 2014 to Oct. 2015. The study group comprised of patients attending Medicine OPD in Govt. Medical College, Jammu. Diagnosis of rheumatoid arthritis was done on basis of 2010-ACR-EULAR classification criteria for RA.

In case of any diagnostic dilemma patients were suggested for:

- 1) Rheumatoid factor by nephelometry.
- 2) Anti CCP antibodies.
- 3) ESR/CRP.

EXCLUSION CRITERIA

- Patients who needed hospital admission or those with any other

- forms of lower limb immobility or abnormality such as paraplegia.
- Critically ill patients, pregnant women, lactating women.

In the present study a co-relation of the impact of various factors like demographic profile, disease activity score (DAS), biochemical parameters with the mental quality of life in rheumatoid arthritis was studied. The demographic profile of all the patients was taken example-age, sex, weight, BMI, urban verses rural, disease severity, Duration of disease, occupation, any sports activities etc. Detailed history about Rheumatoid Arthritis was taken. History about any other coexistence disease was taken. Detailed examination of the patients was done.

Visual Analogue Scale (VAS) & WHOQOL BREF Questionnaire (using 26 questions) was used to assess how patient of Rheumatoid Arthritis feels about his/her quality of life, health, or other areas of life.

RESULTS :

The present study was carried out on 110 patients of the Rheumatoid Arthritis as diagnosed on the basis of ACR-EULAR criteria. The mean age of study population was recorded as 51.34 years. There was a female predominance as 79.1% of the patients were females in comparison to 20.9% males with a male to female ratio of 1:3.78. Using DAS score, most of the patients (54.54%) were found to have moderate disease activity followed by 24.54% of patients which were in disease remission phase. Using VAS score severe (50%) to very severe (37.3%) pain was seen in most of the patients. In the study, it was found that in 36.4% (n=40) of patients there were various deformities of hands and joints present, while in 63.6% (n=70), no deformities were present. The mean score of Physical domain of QOL was 48.19 which falls in moderate functional disability. Using physical domain score of QOL, maximal patients 50% (n=55) were having moderate disability, 21.8% (n=24) were having severe disability, 20.9% (n=23) having very severe disability while 7.27% (n=8) of patients were having mild disability. In the study, it was found that in 36.4% (n=40) of patients there were various deformities of hands and joints present, while in 63.6% (n=70), no deformities were present. In our study, we found that no. of doctors attended by patients with rheumatoid arthritis varied considerably with 68.2% (n=75) sought consultations from three to four doctors, 21.8% (n=24) sought consultations from one to two doctors, followed by 10% (n=11) of patients who sought consultations from five to six different doctors. Average no. of consultations sought by patients were 3.36.

Table 1: Correlation between Demographic Factors, Clinical Variables, Biochemical Parameters and Physical Domain Score of QOL

	N=110	AGE Mean± SD 51.34 ± 6.49	REHUMATOID Factor (Nephlemetry) Mean ± SD 27.19 ± 19.137	No. of Doctors Attended Mean ± SD 3.36 ± 0.993	Anti CCP Mean ± SD 29.92 ± 17.086	DAS Score Mean ± SD 3.49 ± 1	VAS Score Mean ± SD 6.15 ± 1.312
Physical Health Mean ± SD = (48.19 ± 19.409)	Pearson Correlation	-.353	-.516	-.495	-.502	-.697	-.598
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000

Correlation is significant at the 0.01 level (2-tailed)

While undertaking sub-group analysis and correlation analysis with Demographic Factors, Clinical Variables, Biochemical Parameters like Age, RA Factor, Anti-CCP, DAS Score, VAS Score and No. of Doctors attended with the Physical Health, a negative correlation was seen which was of statistical significance ($P < 0.05$) i.e. as the Age, RA Factor, Anti-CCP, DAS Score, VAS Score and No. of Doctors attended increases physical health decreases i.e. pain and functional disability increases.

DISCUSSION :

The Health Related QOL is an important indicator of the burden of musculoskeletal disease. Rheumatoid Arthritis affects many aspects of individuals' lives and its impact extends beyond those areas traditionally considered to be within the domain of medical intervention. It is therefore complex to attempt to summarise in a succinct manner how RA affects individuals; its impact differs from case to case depending on a whole host of personal factors. In the current study functional disability of patients has been assessed using WHO QOL questionnaire which remains the dominant disability measure. Majority of the patients in our study group were in the 5th to 6th decade of their life with female predominance in the ratio of Male: Female - 1:3.78.

Similar results were obtained in previous studies like a rural hospital based prospective study done by **Tandon & Mahajan, 2007(5)**, in which RA contributed to 6.97% of rheumatic disorders with females affected more. Regarding clinical variables like DAS Score & VAS Score which reflect the severity of disease, it was found in our study group that majority of patients were having moderate to very severe DAS & VAS Scores, which is in concordance with the previous studies **Suurmeijer et al, 2001(6)**; **Alishiri et al, 2011(7)**. **Wolfe et al, 1998(8)** in their study concluded that work disability is a key outcome, and arguably the greatest economic cost, resulting from rheumatoid arthritis. Factors that influence work disability include disease activity variables which include DAS and VAS scores. **Wiles et al, 2001(9)** in their study found that all groups showed some impairment in HRQoL as measured by the SF-36. The most seriously affected domain was the role-physical domain which is in accordance with our study in which 50 percent of patients had moderate disability in physical domain of QOL. In our study a negative correlation was observed between the Age, VAS Score, DAS Score, Rheumatoid factor, Anti-CCP and the physical domain of QOL, which was statistically significant. Similar results have been obtained in the previous studies **Bell et al, 1990(10)**. Not much studies have been done regarding the number of consultations from different doctors which patients of RA seek and to best of our knowledge no study has been done in Indian set up regarding this aspect. However results from our study show that average number of consultations which patients took from different practitioners for RA was negatively correlated with all domains of QOL.

CONCLUSIONS :

Rheumatoid Arthritis affects all the physical domain of QOL of the affected patients and is significantly negatively correlated with Age, Rheumatoid factor, Anti-CCP, VAS Score, DAS Score, No. of Doctors attended. Thus results of the current study further impress upon comprehensive and aggressive management plan involving clinicians as well as persons from allied specialties for early diagnosis of Rheumatoid Arthritis as early as window period. Early diagnosis and treatment of RA with especially their focus on older people and these people should be assessed for their level of pain, functional limitations and QOL.

Aggressive and comprehensive management plan for patients diagnosed with Rheumatoid Arthritis which should be a team work and should include healthcare providers from allied specialties like physiotherapists, occupational therapists, psychological counsellors,

so as to improve overall QOL in patients of RA so as to institute treatment and improve QOL of patients in all spheres.

Conflicts of interest: NONE

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