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ORIGINAL RESEARCH

Evaluation of fear avoidance beliefs in adults with Rheumatoid Arthritis

[1]Dr. Abhinav Gupta, [2]Dr. Azghar Ali, [3]Dr. Danish Habib Naik, [4]Dr. Vidushi Handoo

[1,3,4]Senior Resident, Department of Medicine, GMC Jammu, Jammu and Kashmir, India
[2]Senior Resident, Department of Medicine, Tantia Medical College, Ganga Nagar, Rajasthan, India

Corresponding Author
Dr. Vidushi Handoo
Senior Resident, Department of Medicine, GMC Jammu, Jammu and Kashmir, India

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ABSTRACT

Introduction: RA is systemic inflammatory disease that can involve other tissue and organ as well as synovial joint. When the pain becomes chronic in nature fear avoidance beliefs are significantly associated with the experience of pain with affected the Quality of life. **Aim of the study:** To Assess the fear avoidance beliefs in adults with Rheumatoid Arthritis. **Material and Methods:** The present prospective cross-sectional observational study was conducted after ethical clearance on adult patients (>18 years) with rheumatoid arthritis (RA) diagnosed as per 2010 ACR/EULAR classification criteria. The patients were enrolled from outpatient department of the Department of Medicine, Government Medical College, Jammu for a period of one year from November, 2020 to October, 2021.The demographic profiles of all the enrolled patients were recorded along with a detailed history and examination as per the pre-validated proforma. **Results:** In our study, females (80.9%) were more as compared to males (19.1%). Mean age of onset of rheumatoid arthritis of the patients was 41.25±12.03 years. Mean±SD ESR of the patients was 54.06±27.50. Overall, WHO-QoL of the patients was 57.07±11.77. Physical domain was affected more followed by psychological domain.Significant positive correlation ($p<0.05$) was found between physical activity score, work score, total mFABQ score, ESR, disease severity score, PVAS, FVAS, GHVAS as well ADL. **Conclusion:** High fear-avoidance beliefs about physical activity in patients with RA were associated with being female and having a high level of pain. Thus, intensive treat to target strategy and patient-oriented treatment methods focused on cognitive-behaviour accounts may help in combating against FA beliefs of RA patients.

Keywords: Fear avoidance (FA), Rheumatoid arthritis (RA), Quality of Life (QoL).

INTRODUCTION

RA is systemic inflammatory disease that can involve other tissue and organ as well as synovial joint. RA is an inflammation of synovial tissue. There is symmetric involvement of peripheral joints hand and feet and wrist being the most commonly joint involved. Non-articular muscular structures such as tendon, ligaments, and fascia can also affected in RA [1].

Universally applied pharmacologic therapy with non-steroidal anti-inflammatory drugs (NSAIDs) and corticosteroids have proven effective in relieving stiffness and pain, but do not moderate disease progression. Over the last 20 years, the effectiveness of DMARDs has gained much attention as these can efficiently attenuate disease activity and substantially decrease and/or delay joint deformity. In RA complete long-term disease remission is not achieved for many patients despite the increasing number of new drugs and treatment regimens and thus new therapeutic options are required[2].

In patients with rheumatoid arthritis mortality rates are 1.5-1.6-fold higher than in general population, with similar pattern over 60 years. The acute attributed cause of death appears overall similar to the general population, with the cardiovascular cause the most common attributed cause of death, with more infection pulmonary and renal disease in RA than in general population[3].

When the pain becomes chronic in nature fear avoidance beliefs are significantly associated with the experience of pain. The anticipated threat of intense pain will often result in the constant vigilance and monitoring of pain sensation, which, in turn, can cause even low intensity sensation of pain to become unbearable for the person.

Anyone who assess and treat pain related disability should also be prepared to assess and treat pain related FA. In order to reduce likelihood of re-experiencing pain or causing further physical damage patients are motivated to avoid activities in which they have experienced acute episodes of pain. Basic model of FA proposes that pain-related fear evolves when one

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interprets the experience of pain as significantly threatening and start to catastrophize about it [4].
Therefore, the present study was to Assess the fear avoidance beliefs in adults with Rheumatoid Arthritis.

MATERIAL AND METHODS

The present prospective cross-sectional observational study was conducted after ethical clearance on adult patients (>18 years) with rheumatoid arthritis (RA) diagnosed as per 2010 ACR/EULAR classification criteria. The patients were enrolled from outpatient department of the Department of Medicine, Government Medical College, Jammu for a period of one year from November, 2020 to October, 2021.
Exclusion criteria:The patients who require hospital admission, critically ill, pregnant or lactating women, patients with diagnosis other than rheumatoid arthritis and those with chronic kidney disease, any psychiatric illness, were excluded from the study.

Data Collection

Written informed consent was obtained from the enrolled patients after explaining them the nature and purpose of the study. Each patient was questioned on factors like age, sex, age of disease onset, age of diagnosis, disease duration, comorbidities, prescribed drugs. Thorough blood tests, patient's rheumatoid factor and erythrocyte sedimentation rate (ESR) were obtained. Using ESR, patient's Disease Activity Score in 28 joints (DAS28) was calculated. The demographic profiles of all the enrolled patients were recorded along with a detailed history and examination as per the pre-validated proforma.
The patients, thereafter, were evaluated with face-to-face conversation-cum-interview, along with a predesigned Questionnaire, mFABQ (fear avoidance beliefs questionnaire) health assessment questionnaire (HAQ), pain visual analogue scale (VAS), fatigue visual analogue scale (VAS), General health perception visual analogue scale (VAS) and world health organization quality of life (WHOQOL).

Statistical analysis

All the data obtained from the patients of the study group was noted down on proforma especially designed for the purpose. Data was summarised and put in a tabulated from and analysed using appropriate statistical techniques.

RESULTS

Most of the patients were from the age group of 31-40, 41-50 years (27.66% each) followed by 51-60 years (25.33%).In our study, females (80.9%) were more as compared to males (19.1%).Most of the patients in the present study were married (97.2%). Mean age of onset of rheumatoid arthritis of the patients was 41.25±12.03 years.

Table 1: Mean ± SD of different variables

Variables	Mean	SD
ESR	54.06	27.50
DAS SCO	4.96	0.99
PVAS	5.99	2.29
FVAS	5.19	1.96
GHVAS	4.88	1.29
ADL	0.51	0.49

Mean±SD ESR of the patients was 54.06±27.50 with minimum and maximum of 10 and 150 respectively. Mean±SD disease severity score of the patients was 4.96±0.99 with minimum and maximum of 2.1 and 7.4 respectively. Mean±SD PVAS (pain visual analogue score) of the patients was 5.99±2.29.Mean±SD FVAS (fatigue visual analogue score) of the patients was 5.19±1.96. Mean±SD GHVAS (general health perception visual analogue score) of the patients was 4.88±1.29. Mean±SD ADL (activities of daily living) of the patients was 0.51±0.49showed in table 1.

Table 2: Description of WHO-QoL domains.

WHO-QoL	Mean	SD
Physical	47.67	13.133
Psychological	56.74	13.845
Social	65.74	12.607
Environment	58.13	12.940
Overall	57.07	11.77

Table 2 shows the description of WHO-QoL domains among the patients. Overall, WHO-QoL of the patients was 57.07±11.77. Physical domain was affected more followed by psychological domain. Least common affected domain was social followed by environmental.

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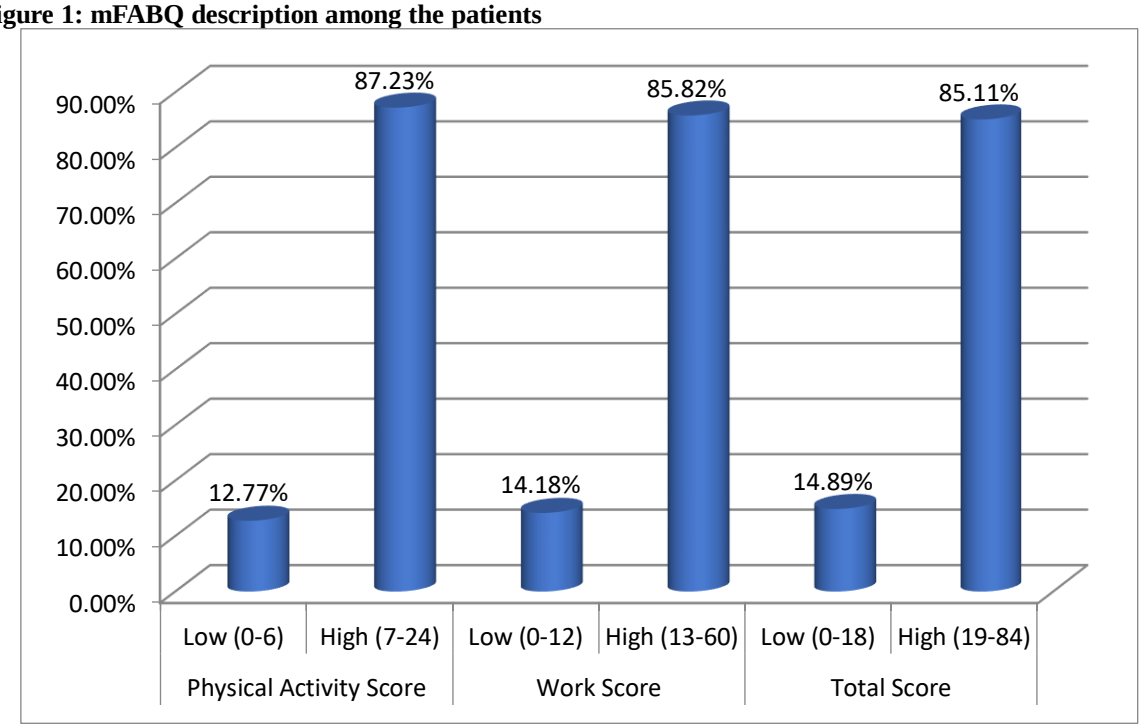
Figure 1: mFABQ description among the patients



Fear-avoidance beliefs were measured by the modified version of the FABQ (mFABQ). This instrument consists of physical activity and work score. High physical activity, work score and total mFABQ was reported in 87.23%, 85.82% and 85.11% of the patients respectively (Figure 1).

Table 3: Correlation between mFABQ score and other variables.

Variables		Physical Activity Score	Work Score	Total mFABQ Score
ESR	r value	.188*	.157	.168*
	p value	.026	.062	.046
DAS SCO	r value	.351**	.339**	.345**
	p value	.000	.000	.000
PVAS	r value	.557**	.574**	.573**
	p value	.000	.000	.000
FVAS	r value	.622**	.628**	.631**
	p value	.000	.000	.000
Ghvas	r value	-.093	-.102	-.100
	p value	.271	.227	.237
ADL	r value	.383**	.368**	.375**
	p value	.000	.000	.000
Overall QoL	r value	-.622**	-.593**	-.606**
	p value	.000	.000	.000

****: statistically significant**

Significant positive correlation ($p<0.05$) was found between physical activity score, work score, total mFABQ score, ESR, disease severity score, PVAS, FVAS, GHVAS as well ADL (activities of daily living). Significant negative correlation ($p<0.05$) was found between physical activity score, work score, total mFABQ and quality of life i.e. with decrease in QoL, mFABQ increases (table 3).

DISCUSSION

Fear-avoidance (FA) beliefs are significantly associated with the experience of pain[5]**.** These beliefs are thought to be related with the development of chronic pain syndrome in some individuals with musculoskeletal pain[6]. As fear and anxiety were found to be natural responses to impending pain, a FA model of exaggerated pain perceptions was postulated which depends on cognitive-behavioural accounts[7]. Briefly, fear and anxiety generated by cognitively exaggerated pain sensation may influence the behaviours of people. For instance, in patients with low-back pain, FA beliefs may preclude return to work related with reduced physical activity[8-9].

Most of the patients were from the age group of 31-40, 41-50 years (27.66% each) followed by 51-60 years (25.33%).In a study by **Haroon N *et al.*, 2007**[10] mean age among the study subjects was 44.4 ± 10.5

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years.In our study, females (80.9%) were comparatively more as compared to males (19.1%). Hence there was female dominancy in our study.**Loof H *et al.*, (2015)**[9] in their study too reported similar female dominance.

Mean±SD ESR among the patients was 54.06±27.50 with minimum and maximum of 10 and 150 respectively. Mean±SD disease severity score among the patients was 4.96±0.99 with minimum and maximum of 2.1 and 7.4 respectively. **Loof H *et al.*, (2015)[9]** in their study revealed similar distribution of ESR and disease severity score among the patients.

Overall, WHO-QoL score among the patients was 57.07±11.77. Physical domain was affected more followed by psychological domain. Least common affected domain was social followed by environmental.Similar research was conducted by **Yacooub YI *et al.*, (2012)[11]**, **Haroon N *et al.*, (2007)**[10]&**Salaffi*et al.*, (2009)**[12] and the authors concluded that the QOL in individuals with RA was significantly lower compared with healthy populations, as well as that functional disability was the most important factor affecting their QOL.

Fear-avoidance beliefs were measured by the modified version of the FABQ (mFABQ). This instrument consists of physical activity and work score. High physical activity, work score and total mFABQ was reported among 87.23%, 85.82% and 85.11% of the patients respectively. Significant positive correlation ($p<0.05$) was found between physical activity score, work score, total mFABQ and score swollen joint count, tender joint count, ESR, disease severity score, PVAS, FVAS, GHVAS as well ADL (activities of daily living). Significant negative correlation ($p<0.05$) was found between physical activity score, work score, total mFABQ and quality of life i.e. with decrease in QoL, mFABQ increases.

Our findings are consistent with studies (**Leeuw *et al.*, 2007)**[7] showing that pain intensity contributes to explaining disability during the acute and chronic stages of pain. A previous study (**Buer N *et al.*, 2002**)[13] reported a relationship between fear-avoidance and activities of daily living (ADL), as well as one between catastrophizing (a person's irrational thought that a situation is worse than it is) and pain intensity in patients with low back pain.

CONCLUSION

High fear-avoidance beliefs about physical activity in patients with RA were associated with being female and having a high level of pain. Thus, intensive treat to target strategy and patient-oriented treatment methods focused on cognitive-behaviour accounts may help in combating against FA beliefs of RA patients. Additional research is warranted for adults with RA to capture the multiple potential correlates to fear-avoidance beliefs about physical activity.

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