DOI- 10.22270/jmpas.v8i1.798
Journal of Medical Pharmaceutical
And Allied Sciences
RESEARCH ARTICLE

www.jmpas.com
ISSN 2320-7418

THE IMPACT OF RHEUMATOID ARTHRITIS ON HEALTH RELATED QUALITY OF LIFE: A LITERATURE REVIEW OF DEVELOPED AND DEVELOPING WORLD

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Keywords
Rheumatoid arthritis, quality of life, SF-36, medication therapy

Received
21/01/2019
Reviewed
23/01/2019
Revised/ Accepted
01/02/2019

ABSTRACT

Patients with rheumatoid arthritis have been reported to have a lower self-reported overall health status and higher bodily pain, contributing towards to reduced HRQoL. Reduced health related quality of life in RA patients is related with increased utilizing of healthcare resources and also with increased level of depression. The aim of this study is to summarize research findings from developed and developing countries as well as from Pakistan regarding impact of rheumatoid arthritis on health related quality of life. A total of 60 studies were reviewed regarding rheumatoid arthritis and health related quality of life. The review concluded that there is a need to improve HRQoL among rheumatoid arthritis patients to decrease the rates of treatment failure and improve treatment response. Patient care should be focused on behavioural and life style modification along with symptomatic relief by pharmacological treatment provided to such patients at both acute and chronic phase of disease and treatment to prevent treatment defaults.

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INTRODUCTION

Rheumatoid arthritis is a chronic, inflammatory, and an auto-immunological disorder whose etiology is unknown. It may be controlled with time and proper treatment, but if uncontrolled, it can lead to deformity of affected joints due to the cartilage damage and erosion of bone. This symmetrical disease progresses from peripheral to more proximal inter pharyngeal joints and, in many patients, results in functional disability [(1)]. Rheumatoid Arthritis has been associated to significant decrease in patients' daily life activities and quality of life (QoL), with symptoms of swelling of joints, pain and joint stiffness can lead to significant deprivation in physical and mental health [(2)].

Rheumatoid arthritis can influence physical, emotional and psychosocial health, and HRQoL provide a clear image of these domains. A large number of studies including population based and community based studies have examined the impacts of arthritis on physical functioning and also disability of patients [(3)]. Rheumatoid Arthritis cause devastating impaired functioning, both physically and mentally. Reduced health related quality of life in RA patients is related with increased utilizing of healthcare resources and also with increased level of depression. Along with negative effects on patient's quality of life and life expectancy ratio, RA also has a significant economic impact on patient's family, health care providers, and also society (Söderlin et al., 2004).

The aim of this paper is to highlight the impact of rheumatoid arthritis on Health Related Quality of Life by reviewing the past and present literature. The main objective is to identify and review the degree of reduction in HRQoL as well as interventions to improve the HRQoL in arthritis patients worldwide.

METHODOLOGY

The electronic databases PubMed, Google Scholar, and Science Direct, were searched for articles published from 2000 to 2017. The search terms used with each database were rheumatoid arthritis, physical health, emotional health, psychosocial health and health related quality of life. Full-text papers, as well as abstracts, were retrieved and included in review. A total of 60 studies were retrieved from databases related to rheumatoid arthritis and HRQoL. The studies were categorized on the basis of their country of publishing into developed countries, developing countries, and Pakistan. 40 studies from developed countries, 15 from developing countries, and 5 studies from Pakistan were included in this review (Table 1). Quantitative cross-sectional surveys, as well as qualitative studies, were also included in this study.

RESULTS AND DISCUSSION

Rheumatoid arthritis can influence variety of physical, emotional and psychosocial health, and HRQoL provide a clear image of these domains. Therefore HRQoL is a standard and generally accepted measure in research studies. A large number of studies including population based and community based studies have examined the impacts of arthritis on physical functioning and also disability of patients [(3)].

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Table 1 Details of Countries and Number of Included Studies

Regions	Number of studies included	Countries
Developed countries	30	USA, Australia, UK, Japan, Germany, Belgium, Switzerland, Sweden, Canada, Denmark, Greece, Spain, Italy, Finland, Ireland, Netherlands
Developing countries	13	Turkey, China, South Africa, Ghana, Malaysia, India, Taiwan, Iran, Qatar, Eritrea, Jordan
Under developing	7	Pakistan

Tools Used to Measure Health Related Quality of Life among Rheumatoid Arthritis Patients

The most valid instruments for measurement of health related quality of life in RA patients include Short form-36 health survey (SF-36), EuroQol (EQ)-5D, 15D, rheumatoid arthritis quality of life Scale (RAQoL), health assessment questionnaire (HAQ), and visual analog scales (VAS). The most responsive tools were SF-36 and VAS bodily pain scale while the RAQoL and HAQ were most reliable. The choice of tool depend on the study objectives [(4)].

Short survey form (SF-36) is a widely used tool for assessment of HRQoL in patients with RA. Health related quality of life is associated with general, physical, emotional, and social function scales. Other SF-36 scales, such as role physical and role emotional, are not related with activity measures. A study conducted in Germany reported the maximum reliability, validity and responsiveness on one cohort with RA patients [(5)]. A study conducted in China on the feasibility of using SF-36 as tool to evaluate HRQoL and study concluded that SF-36 is a valid and reliable tool for assessing HRQoL [(6)].

The EuroQol (EQ-5D) is basic health index questionnaire comprised of five sections and a visual analogue self-rating scale (VAS). The questionnaire is used to measure health status and health profile. EQ-5D demonstrated moderate to high relation with functional disability and impairment measures. A study conducted in US concluded that the health status in terms of mobility, body pain, disability, and disease activity level, level of anxiety and depression were explained by the EQ-5D and visual analogue score. These two scales found more responsive than any of the other tool. Similarly the reliability of the EQ-5D and visual analogue scale were found better [(7)].

Health status in rheumatoid arthritis (RA) has been measured by numerous tools, one of them is arthritis impact measurement scales (AIMS) and health assessment questionnaire (HAQ). The principal issue is that there is no immediate evaluation can be made with other disease-specific tool. The short form-36 health survey (SF-36) is a 36-item

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questionnaire which assess all eight domains of health quality [5].

Overview of Health Related Quality of Life in Rheumatoid Arthritis in Developed Countries

A study conducted in US on health related quality of life in early rheumatoid arthritis and impact of treatment on disease showed the high disease burden on patients' HRQoL. Improved health related quality of life with successful treatment of early RA was reported. Rapid response for HRQol was observed by etanercept [8]. Another study was conducted in Norway to compare quality of life among patients with hand osteoarthritis with RA patients from the general population. The study illustrated that patients with hand osteoarthritis had larger impact on HRQoL. Physical activity was poor in RA as compared to hand osteoarthritis patients [9].

A randomized clinical trial was conducted in USA to observe the effectiveness of abatacept on quality of life (QoL) in RA patients in comparison with anti-TNF therapy. The result of this study further stated that clinically significant effectiveness of abatacept over placebo treatment enhancing QoL. Furthermore, concluded that there is high rate of clinical benefits of medication therapy with abatacept as compared to placebo. Abtacept showed significant changes in daily life activities even in RA patients who developed resistance against TNF treatment [10]. A comparative study was conducted among psoriatic arthritis (PsA) and rheumatoid arthritis (RA) patients in Canada. Although patient of both diseases experienced poor QoL, logistic deterioration analyses indicated expanded levels of vitality in PsA patients than RA [11].

A Columbian study examined the relationship between quality of life (QoL) and social, medical, and psychosocial factors in patients with Rheumatoid arthritis (RA). The study reported that patient with poor quality of life had increased anxiety and depression level, while patient with higher perceptions of being social directly associated with good quality of life. Psychosocial factors independently effect QOL in RA. Additional research into the advantages of psychosocial thought of patients with RA and to increase QoL of provision of comprehensive care is necessary [12].

A study conducted in UK on the topic of relationship between rheumatoid arthritis and other chronic diseases like cardiovascular disease, hypertension, chronic heart disease and hyperlipidemia in correlation with mortality rate concluded that significant association between RA and these diseases [13].

Patients with rheumatoid arthritis (RA) are at high risk of work disability at the initial level of rheumatoid arthritis. Permanently early work disability among rheumatoid arthritis patients were reported in Finland. Main risk factors may comprised of job with more physical activity, older age, and lower educational level [14]. Rheumatoid arthritis (RA) is directly related with reduced life expectancy. The mortality depends upon the duration of disease. Study of UK reported that most of the deaths are associated with infection, and other comorbid diseases like CVD and respiratory disease. But some

 DOI- 10.22270/jmpas.v8i1.798

evidence suggested that effective disease-modifying therapy can improve survival of RA patients [15].

Overview of Health Related Quality of Life among Rheumatoid Arthritis Patients in Developing Countries

A cross-sectional study conducted in Iran evaluated quality of life in rheumatoid arthritis patients. The result highlighted that half of the patients had good and moderate quality of life while the other 50% had poor health related quality of life. For prevention and control of the disease, appropriate interventions and strategies need to be designed to promote better quality of life [16]. Another study conducted in Taiwan measured health related utilities on patients with rheumatoid arthritis and investigated absence and presence using questionnaire related to work productivity and activity impairment. Low productivity directly related with absence and present were reported [17]. Highest RA prevalence was found in age group of 41–50 years. VAS had a positive correlation with HAQ-DI. Relationship of HAQ-DI and DAS28 was not statistically significant; positive correlation between DAS28 and HAQ-DI in disease duration greater than 5 years group was observed. Mean HAQ score was the highest in more than 10 years disease duration population [18].

Similar study was conducted in India to determine the average cost of treatment incur to perform Pharmaco economic analysis of drug regimen and changes in patient economic burden with disease activity for RA patients. Medication costs along with investigation charges were found as the highest contributor to the total expenses incurred by RA patients & have direct impact on HRQoL. These costs may be varying from patient to patient based on Disease Activity Score and also presence of comorbid conditions. So it is very important to timely diagnose and control the disease at an early stage ultimately control the monetary burden on the patient [19]. A study conducted in Egypt to measure the impact of rheumatoid arthritis (RA) on the health related quality of life (QoL) of patients. The impaired quality of life was found in Egyptian patients and duration of disease was found as the considerable predictor [20]. Health related quality of life was found impaired in rheumatoid arthritis patients. Significant differences between different levels of disease activity showed higher HRQoL and functional capacity at lower disease activity levels [21].

The major predictors of HRQoL are bodily pain, functional disability and mental depression were reported as in one of the study conducted in Singapore. Evidence based interventions which focus on relief of pain, improve functional ability avoid disability and to reduce depression are required to improve the HRQoL of patients with rheumatoid arthritis [22]. Quality of life and functional capability in RA were affected in adults and the elderly reported in study conducted in Brazil. However, the results showed no considerable change among groups, with the exception of the 6 Mann Whitney test [23]

A study was conducted in Hungary to check the association amongst medication adherence and HRQoL, which concluded that

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the effect of medication adherence on HRQoL might be a result of the effective treatment regimen and the side effects of that therapy. HRQoL may also manipulate the patterns of usage of drugs by the patients, as an improved HRQoL might prompt non-adherence. The relation between adherence rate and HRQoL may vary over time, as the negative impacts of non-adherence may end up predominant in the long term [24]

Adherence to drug treatment and health-related quality of life (HRQL) are two different concepts. These two concepts have in common that they are both related to the patient and both are important to consider when assess the impact of any type of intervention in health care. Study conducted in Canada concluded that patient adherence to drug regimen is necessary for the success of drug treatment. A positive impact on HRQoL perceived by the patient is also an important criterion for evaluating treatment success (Côté et al., 2003).

Overview of Health Related Quality of Life among Rheumatoid Arthritis in Pakistan

Rheumatoid arthritis has been ranked among the 40th leading chronic disease that causes disability around the globe [25]. And some recent statistics shows the annual mortality rate per 100,000 people from rheumatoid arthritis in Pakistan has increased by 47.2%, an average of 2.1% a year. The prevalence of rheumatoid arthritis is 0.142% in the population of Karachi, while in northern Pakistan the prevalence is 0.55%. Rheumatoid arthritis was more common in the population of northern belt and the frequency was similar to that amongst Pakistani residents in England [26].

A study in Pakistan conducted to determine the frequency, demographic characteristics, and associated comorbidities in patients with rheumatoid arthritis (RA) concluded that significant number of female patients visited the rheumatology clinic diagnosed with RA. The risk of development of cardiovascular disease in RA patients is relatively high [27]. Another study was conducted in Pakistan with the objective of comparing the point prevalence of symptoms of rheumatoid arthritis among adults residing in poor rural and urban societies. The study concluded that frequency of RA was lower in the urban population, that might be cause of earlier death of females [28].

A survey was conducted in Pakistan to check the prevalence of Rheumatoid arthritis in well off and poor urban communities of Pakistan. The study concluded that the lack of number of older female in both the upper and poor communities results in the low rates of RA. Difficulty arises in application of current diagnostic standards to South Asians with RA as there is shortage of rheumatoid nodules in the community [29]. A study was conducted in Pakistan with the objective of determining the level of disease awareness among patients of rheumatoid arthritis. The results highlighted that rheumatoid arthritis is a chronic inflammatory disease which requires long-term management and counseling. Appropriate emphasis should be given to the counseling and education of the patients [26]. A study conducted in twin cities of Pakistan to investigate physician's knowledge and perceptions towards standard

 DOI- 10.22270/jmpas.v8i1.798

treatment guidelines for rheumatoid arthritis concluded that the overall understanding of prescribers about standard treatment regimens for rheumatoid arthritis was moderate. More than half of the prescribers were aware of correct standard treatment regimens of NSAIDs and DMARDs used in the management of arthritis. Prescribers working as general practitioners possessed comparatively better knowledge than their counterparts [25].

CONCLUSION

The review concluded that there is a need to improve HRQoL among patients diagnosed with rheumatoid arthritis to decrease the rates of treatment failure and improve treatment response. Patient care should be focused on behavioral and life style modification along with symptomatic relief by pharmacological treatment provided to such patients at both acute and chronic phase of disease. There is a need to conduct future studies to explore effect of different strategies used for treatment of rheumatoid arthritis. Longitudinal studies can be proposed to explore the factors affecting HRQoL among such patients and treatment failures. Moreover, effects of non-pharmacological treatment on HRQoL can be investigated.

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