Assessment of Rheumatoid Arthritis Patients' Adherence to Treatment

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Abstract: *Background:* Reports on adherence among patients with rheumatoid arthritis (RA) in Egypt and the Middle East region are lacking. This study aimed to measure adherence to treatment among a sample of patients with RA at Ain Shams University Rheumatology outpatient clinic and to assess factors affecting it. *Methods:* A cross-sectional descriptive study was carried out at the rheumatology outpatient clinic on a sample of 140 patients with RA. An interview questionnaire was used to measure adherence using the 8-item Morisky's scale, factors affecting adherence to treatment like patients satisfaction were assessed using the short form patient satisfaction questionnaire, also patients' knowledge, beliefs and rate of prescription refilling were assessed. Disease Activity Score—28 was used as an objective method to assess RA disease activity. *Results:* According to Morisky's scale, 90.6% and 9.4% were classified as low and moderately adherent, respectively, none was classified as highly adherent to treatment. Important barriers to adherence reported were fear of side effects, nonavailability of free drugs in hospital pharmacy and cost of medications. Younger patients ($P = 0.002$) and those reporting greater general satisfaction ($P = 0.02$) were more likely to be adherent. In addition, on-time refill rates of medication ($P = 0.001$) and disease activity ($P = 0.02$) were associated with higher adherence scores and thus further validated the results of the adherence questionnaire. *Conclusions:* Higher adherence was associated with more positive beliefs on medication, greater satisfaction with health care and less disease activity.

Key Indexing Terms: Rheumatoid arthritis; Barriers to adherence; Morisky's scale; Patient satisfaction. **[Am J Med Sci 2015;349 (2):151–156.]**

Rheumatoid arthritis (RA) is a chronic, progressive, incapacitating disease that needs uninterrupted therapy with many medications.[1,2] Functional disability is considerably reduced with efficient management of RA in this respect drug efficacy and patient adherence with the treatment prescribed is equally important.[3–5] Adherence to a medication regimen is "the extent to which patients take medications as prescribed by their health care providers."[1] Another definition is "the extent to which a person's medication-taking behavior coincides with medical advice."[6]

Nonadherence is a universal widely prevalent phenomenon; it increases the risk of unnecessary changes in treatment and causes preventable morbidity, mortality, loss of productivity and loss of health care resources like more visits to physicians and to emergency department and more hospital admissions.[7]

Adherence to medical treatment in patients with RA is not well understood as compared with other chronic diseases such as asthma and diabetes due to scant data.[5] Adherence rates in RA have ranged from 30% to 93% in different studies.[5,7]

Higher adherence rates are observed among patients with acute conditions, as compared with those with chronic conditions; adherence among patients with chronic conditions is unfortunately low and falling intensely after the first 6 months of therapy.[8,9] In patients with nonadherent RA, the risk of a disease progression and activity has been found to increase significantly.[4]

Adherence to therapy is an individual patient behavior that is difficult to objectively measure.[10] The 8-item Morisky's scale is supplemented with additional items addressing the circumstances surrounding adherence behavior and is a commonly used self-reported adherence measure that has been shown to be predictive of adherence.[11] Common barriers to adherence as identified from surveys can be related either to patients or physicians. The most common reasons cited by patients for not taking their medications included forgetfulness, other priorities, decision to omit doses, lack of information and emotional factors.[12] In addition, physicians contribute to patients' poor adherence by poor interaction with their patients and by prescribing complex regimens and not appropriately explaining the benefits and side effects of the drugs to their patients. Also, physician should put in consideration the patient's lifestyle and the cost of the medications when prescribing a certain regimen. An expanded view of barriers must include access to health care and its cost as well.[13,14]

To improve adherence among RA patients' barriers should be identified and appropriate interventions tailored. Scarce data and studies are available on RA patients' adherence in Middle East and North Africa region.[15] According to our knowledge, there were no studies on adherence among Egyptian patients with RA. The aim of this study was to measure adherence rate in patients with RA attending Ain Shams University Rheumatology outpatient clinic and to assess factors affecting it.

METHODS

Study Design

This is a descriptive study followed by analysis of factors affecting adherence among patients attending Ain Shams University Rheumatology outpatients' clinic.

Study Population and Sample Size

Patients eligible for participation in the study needed to be at least 18 years old, diagnosed with RA according to ICD-10 and having duration of illness of at least 1 year.

Two hundred patients were registered in the rheumatology outpatient clinic at Ain Shams University. Using Epi Info statistical package version 7 for cross-sectional study, the total number of patients with RA registered is 200. Expected

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TABLE 1. Demographic characteristics of study respondents

	Frequency (n = 140)	Percentage
Age (y)		
Mean ± SD (range)	45 ± 9 (23–65)	
Gender		
Male	9	6.4
Female	131	93.6
Residency		
Outside Cairo	21	15
Inside Cairo	119	85
Education		
Illiterate	56	40.0
Read and write	19	13.5
Primary school	26	18.6
Preparatory/secondary school	33	23.6
University degree	6	4.3
Marital status		
Single	3	2.1
Married	131	93.6
Divorced/widowed	6	4.3
Occupation		
Nonemployed	111	79.2
Employed	29	20.8

TABLE 2. Duration of disease and medications taken and adherence among study respondents

	Frequency (n = 140)	Percentage
Duration of disease (y)		
Mean ± SD (range)	7 ± 5 (2–20)	
Duration of medications use (y)		
Mean ± SD (range)	7 ± 4 (2–19)	
Disease activity		
Remission	27	19.3
Low activity	20	14.3
High activity	93	66.4
Medications taken[a]		
NSAIDS	140	100.0
Hydroxychloroquine	128	91.4
Folic acid	105	75.0
Methotrexate	105	75.0
Calcium	120	85.7
Glucocorticoids	120	85.7
Biologic drugs	0.00	0.0
Rate of prescription refilling		
Late	106	75.7
On time	34	24.3
Morisky's scale adherence rate		
Moderate adherence	127	90.7
Low adherence	13	9.3

[a] Multiple drugs intake by each patient.

frequency of adherence rate among patients with RA as revealed from a Jordanian study is 65%.[12] Calculation of sample size at 95% confidence interval and power of test 80%, revealed that at least 127 were required and after adjusting for 10% dropout, a sample size of 140 patients with RA was suggested. The Ain Shams University rheumatology outpatients' clinic opens 2 days per week and all patients who attended this outpatients' clinic between May 2012 and December 2012 and met the eligibility criteria were consecutively included in the this study.

Study Tool

An interview questionnaire was used to collect data covering the following items.

Part I: sociodemographic data, clinical and medication data directly obtained from patients and from their medical records.

Part II was a medication adherence test using a licensed Arabic version of the validated 8-item Morisky's Medication Adherence Scale (MMAS-8), in addition to data on prescription refilling and reasons of nonadherence from patient view.

The MMAS-8 has 7 questions having a binary answer and 1 question answered on a 5-point Likert's scale. It is a widely used instrument to measure self-reported medication-taking behavior. It has been validated linguistically in several languages and undergone criterion-related validation, construct validation and convergent validation. The MMAS-8 is an ordinal scale with a range from 0 to 8, and its scoring can be obtained from the developer/owner. According to the MMAS-8 scoring system, patients who had a low or a moderate rate of adherence were considered as nonadherent. Persons are classified as low adherers if they have <6 points, medium adherers if they have 6 to 7 points and high adherers if they have 8 points.[11]

Part III measured factors affecting adherence such as: Patient knowledge is an index measure and was assessed using a 4-item questionnaire answered as "correct," "incorrect" and "don't know" and the "don't know" was scored as incorrect, patient beliefs assessed using 4 items questionnaire answered on a 3-point Likert's scale and patient satisfaction was assessed using short form patient satisfaction questionnaire answered on 5-point Likert's scale.[16]

Part IV consisted of an objective method to measure adherence using Disease Activity Score (DAS-28 version 3) by DAS calculator, which measured disease activity by entering the number of tender joints, swollen joints and erythrocyte sedimentation rate value. After a complex calculation made by DAS-28 calculator, the results fall into one of the following categories:

1. DAS-28 >5.1 = high disease activity.
2. DAS-28 <3.2 = low disease activity.
3. DAS-28 <2.6 = remission.

The DAS score was originally developed by Dutch rheumatologists to standardize and compare results in clinical trials of new drugs for treating RA. Presently, the DAS-28 has also been applied to daily clinical practice.[17]

The DAS-28 used in this study was performed by the examining physician on the same day of the interview.

Ethical Consideration

Approval of study conduction was obtained from the Ethical Review Committee at the Faculty of Medicine, Ain Shams University. Administrative approvals from the director of outpatient clinics of Ain Shams university hospital and head of Rheumatology department were obtained. In addition, the purpose of this study was explained to all participants and confidentiality was assured, a verbal informed consent was obtained and the survey tool was anonymous.