WOMEN'S SEXUAL HEALTH

Prevalence of Sexual Disorders in Patients With Rheumatoid Arthritis and Associated Factors

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ABSTRACT

Introduction: Rheumatoid arthritis (RA) is a chronic and progressive pathology, present in between 0.5% and 1% of adults. Sexual disorders (SDs) occur in between 31% and 70% of all patients with RA.

Aim: To establish the associated risk factors and the prevalence of SDs in a group of patients with RA.

Methods: An analytical cross-sectional study was performed, evaluated with the Diagnostic and Statistical Manual of Mental Disorders-V tool. The related factors and the activity of the disease were explored. A multivariate logistic regression analysis was conducted.

Main Outcome Measure: The prevalence of SDs was 29.6%. There was an association between the presence of SDs and gender (women; odds ratio [OR]: 0.6, 95% CI: 0.4−0.8), age (OR: 1.4, 95% CI: 1.1−1.8), psychological alterations (OR: 12.1, 95% CI: 5.9−27.2), and Disease Activity Score 28 (OR: 1.6, 95% CI: 1.2−2).

Results: A total of 1,436 patients, with a median age of 56 years, were analyzed.

Conclusion: SDs are present in a third of patients with RA. Among the factors associated with SDs were the activity of the disease, presence of mood disorders, psychiatric disorders, alcoholism, and concomitant autoimmune pathologies. These findings suggest the necessity of a multidisciplinary approach to properly manage RA, as well as an enhancement in communication channels between the health professional team and the patient. **Santos-Moreno P, Castro CA, Villarreal L, et al. Prevalence of Sexual Disorders in Patients With Rheumatoid Arthritis and Associated Factors. Sex Med 2020;8:510−516.**

INTRODUCTION

Rheumatoid arthritis (RA) is an inflammatory disease of autoimmune origin, which not only chronically affects the musculoskeletal system, but also impacts the quality of life of the patient in all aspects.[1] Its prevalence is 1.5% in the world population, and for Latin America, it varies between 0.9% and 1.5%. It affects women more frequently and its peak incidence occurs between the fourth and sixth decade of life.[2−4] This pathology is accompanied by other alterations, such as sexual disorders (SDs) ranging from 31% to 70%, being an

underestimated comorbidity due to the lack of a multidisciplinary approach[5] that leaves aside the comprehensive structure of the patient as an individual, where sexuality clearly constitutes a fundamental element in both personal and social behavior.[6] These disorders are classified according to the American Foundation for the Study of Urological Pathologies as alterations in sexual desire, dysfunction or lack of excitement, orgasmic alteration, and sexual pain or dyspareunia.[7] These disorders are closely related to the symptoms of RA, specifically chronic pain, physical disability, medication side effects, and low self-esteem that ultimately impact on the reduction of sexual desire.[8] For this reason and according to the recommendation of the European League against Rheumatism, comprehensive treatment with psychosocial interventions has shown greater impact on the patient compared to conventional treatment only with a rheumatologist.[9] Taking into account the publications that are currently presented on this topic, it is necessary to know the prevalence of SDs and explore the possible associated factors that may favor

early identification and thus comprehensively treat a disease with a high burden that affects all the different Latin American health systems. Consistent with this approach, the objective of this work was to identify the associated risk factors and the prevalence of SDs in a population of patients with a diagnosis of RA in a referral center for the treatment of autoimmune pathologies in Bogotá, Colombia.

METHODS

Design

An analytical cross-sectional study was carried out in a reference center (BIOMAB) for the treatment of autoimmune pathologies in Bogotá, Colombia.

Study Population

The inclusion criteria ensured that patients older than 18 years with a diagnosis of RA were included in the study, taking into account the criteria of the American College of Rheumatology-European League against Rheumatism.[10] The other inclusion criteria were patients treated in BIOMAB (comprehensive care center in RA), and assessed in a psychology consultation as part of the comprehensive approach. Exclusion criteria included records of patients who did not have a Disease Activity Score 28 (DAS28) or functional capacity with the Health Assessment Questionnaire (HAQ) report; such patients were not taken into account.

Data Collection

The data source was the referral center's clinical records system, which is part of a database for the epidemiologic registry, as part of the mandatory report to the national government of patients with RA, known as the High-Cost Account (*Cuenta de Alto Costo* in Spanish).[11] These data are obtained from routine psychology evaluation. In order to guarantee patient confidentiality, the information analyzed did not include variables that could identify the patient. The information included in this study was collected during 5 years from clinical records system for patients with RA (2011−2015).

Variables

The presence of SDs was established as a dependent variable. The other variables were considered as independent variables or related factors: DAS28 to classify the activity of the disease—categorized as *non-activity*: remission, and low disease activity DAS28 < 3.2, and *activity*: moderate and severe disease activity DAS28 > 3.2[12]—and functionality or functional capacity with the HAQ scale, categorized into: *without disability or low disability* (<1) and *with moderate-severe disability* (>1.1).[13,14] Sociodemographic variables were also included, such as age, sex, schooling, and some psychological alterations such as alterations in mood, and the presence of sleep disorders. The treatment was classified in conventional treatment with and without biological

agents. For clinical diagnosis, patients were examined by a rheumatologist with extensive experience in RA. For the diagnosis of SDs, the patients participated in a comprehensive care program, where an interdisciplinary group of health professionals evaluated different physical and psychological aspects. In this evaluation, a psychologist with experience in sexual and reproductive health carried out a series of evaluations that focused on psychological aspects, including social and personal components, exploring the perception and sexual activity of the patient, basing their diagnosis on the Diagnostic and Statistical Manual of Mental Disorders-V.[15]

Statistical Analysis

A descriptive analysis of the information was carried out using absolute and relative frequencies for the qualitative variables, and for the quantitative variables, measures of central tendency and dispersion. The Shapiro-Wilk test was used to evaluate the distribution of the numerical variables. For the estimation of prevalence, the number of patients diagnosed with SDs was considered in the numerator, and the denominator represented all patients with a diagnosis of RA confirmed at the time of care. For hypothesis testing, a *P* value of less than 0.05 was considered.

We explored the possible factors associated with the presence of SDs using parametric and non-parametric tests, according to the characteristics of the variables. To estimate the associations, the indirect relative risk (odds ratio [OR]) with its CIs was calculated. With the factors that were significant from the statistical point of view or those with clinical relevance, a logistic regression model was constructed, which was validated with the Hosmer-Lemeshow goodness-of-fit test. This information was analyzed in Stata 14 (StataCorp LLC, College Station, TX).

This study considered the international regulation for research with human beings and took into account the Colombian research regulation (Resolution 8,430 of 1993), classifying it as a research with minimum risk. It was presented to and approved by the BIOMAB research committee.

RESULTS

A total of 1,436 patients with a diagnosis of RA from a reference center for autoimmune diseases were analyzed. Of these 273 (19%) were male and 1,163 (80.9%) female. The minimum age was 18 years and the maximum age was 87 years. The occupation of the patients was described, evidencing that 392 (33.7%) were working, 390 (33.5%) were retired, 347 (29.8%) were dedicated to their homes, and 34 (2.9%) did not have a current job. The remaining characteristics of the population under study are presented in Table 1.

With respect to the characteristics of RA in the population studied, the activity of the disease showed that 936 (65.2%) were in remission, 223 (15.5%) in low disease activity, 233 (16.2%) in moderate activity, and 44 (3.1%) in severe disease activity. In relation to pharmacologic therapy, these were distributed as

Table 1. Baseline population characteristics

Variable	Women (n = 1,163)		Men (n = 273)		Total (n = 1,436)	
	n	%	n	%	n	%
Socioeconomic classification*						
Strata I—II—III (low)	1,079	92.8	259	94.8	1,338	93.2
Strata IV—V (high)	84	7.2	14	5.1	98	6.8
Marital status						
Single	176	15.1	32	11.7	208	14.5
Married	687	59.1	175	64.1	862	60
Divorced	217	18.6	52	19	269	18.7
Widowed	83	7.1	14	5.1	97	6.8
Education						
Illiterate	68	5.9	27	10	95	6.6
Elementary	495	42.7	149	54.6	644	44.9
Secondary	397	34.2	72	26.3	469	32.7
University	200	17.2	25	9.2	225	15.7
Cohabitation						
Living alone	201	17.3	49	17.9	250	17.4
Accompanied	962	82.7	224	82.1	1,186	82.6
Age,[†] median (IQR[‡])	55	(50—59)	60	(54—64)	56	(50—60)
Time of evolution of RA,[†] median (IQR[‡])	11	(6—16)	10	(6—16)	11	(6—16)
Time receiving treatment for RA,[†] median (IQR[‡])	5	(3—8)	5	(3—8)	5	(3—8)

RA = rheumatoid arthritis.
*Classification and definition of socioeconomic strata according to the National Administrative Department of Statistics (DANE, Colombia).
[†]Years.
[‡]IQR = interquartile range p25—p75.

follows: 369 (25.7%) were being treated with biological drugs and 1,067 (74.3%) with non-biological disease modifying antirheumatic drugs. The presence of comorbidities apart from RA was determined, representing other autoimmune diseases in 130 cases (9%), non-autoimmune diseases in 596 patients (41.5%), and in 211 subjects (14.7%) the coexistence of autoimmune and not autoimmune pathologies; the 499 remaining cases (34.7%) did not report comorbidities.

SDs

The prevalence of SDs was 29.6% (425/1,436) with a median age of 53 years (interquartile range [IQR]: 49—56) ($P < .001$); of these 425 subjects, 322 (75.7%) were women and 103 (24.2%) men, and 158 (37.1%) reported dyspareunia, 125 (29.4%) dissatisfaction, 89 (20.9%) sexual dysfunction, 63 (14.8%) loss of sexual desire, 43 (10.1%) orgasmic decrease, and 36 (8.4%) premature ejaculation. The association between the different disorders and the sex of the patient was studied, which is presented in Table 2.

Clinimetrics Values According to Sexual Alterations

Regarding the activity of the disease at the time of evaluation in patients with SDs, the median of DAS28 was 3.6 (IQR: 2.6—4.7) ($P < .001$), while the median of the HAQ functionality was 0.5 (IQR: 0.12—1.12) ($P < .001$). The association between DAS28 and HAQ with SDs was evaluated by the following results: DAS28 and dyspareunia (OR: 4, 95% CI: 2.7—6.1), DAS28 and orgasmic decrease (OR: 1.1, 95% CI: 0.6—2.2), and DAS28 and loss of sexual desire (OR: 0.6, 95% CI: 0.3—1.1). Results for HAQ and dyspareunia (OR: 2.4, 95% CI: 1.6—3.4), HAQ and loss of sexual desire (OR: 1, 95% CI: 0.5—1.8), and finally HAQ and orgasmic decrease (OR: 1.1, 95% CI: 0.5—2.3) were also obtained. Finally, the SDs were compared with the evolution time of the disease ($P = .1$) and the

Table 2. Type of sexual disorders according to sex

Variable	Women (n = 1,163)		Men (n = 273)		P value*
	n	%	n	%	
Dissatisfaction	102	8.8	23	8.4	.8
Loss of sexual desire	53	4.6	10	3.7	.5
Orgasmic decrease	15	1.3	28	10.3	<.001
Dyspareunia	152	13.1	6	2.2	<.001

*Chi-square test.

time since the pharmacologic treatment began ($P = .5$), without finding differences from the statistical point of view.

Factors Related to SDs

The activities performed by the patients in their free time were evaluated, evidencing that 64 (4.5%) carried out self-care activities (healthy eating and personal hygiene), 195 (13.6%) leisure activities or sports (gymnasium, dances, activity groups for older adults), 370 (25.7%) practiced handicrafts (embroidery, painting, country art), 227 (15.8%) attended some patient groups, 352 (24.5%) attended mixed activities, and 228 (15.9%) did not carry out any activity. Details of the bivariate analysis are presented in Table 3.

Multivariate Analysis

A model was constructed with the logistic regression method, documenting a set of possible predictors capable of explaining the occurrence of SDs. Variables such as sex, cohabitation, alcoholism, sedentary lifestyle, the presence of concomitant autoimmune pathologies, mood disorders, and somatic symptom disorders were included, as well as DAS28 and HAQ. The proposed model was subjected to the Hosmer-Lemeshow

Table 3. Bivariate analysis between the associated risks factors with the presence of sexual disorders

Variable	Sexual disorders				OR	95% CI	P value*
	Yes (n = 425)		No (n = 478)				
	n	%	n	%			
Age (> 50 y)	333	78.3	728	72	1.4	1.1–1.8	< .001
Sex (female)	322	**75.7**	841	83.1	0.6	0.4–0.8	.001
Sociodemographic classification (I–II–III)							
(I–II–III) Low vs (IV–V–VI) high	398	93.6	940	92.9	1.1	0.6–1.8	.6
Lives alone	**55**	12.9	195	19.3	0.6	0.4–0.8	.003
Risk factors							
Smoking	4	0.9	18	1.7	0.5	0.1–1.6	.2
Alcoholism	53	12.4	60	5.9	2.2	1.4–3.3	< .001
Sedentism	152	35.7	255	25.2	1.6	1.2–2.1	< .001
Diabetes/dyslipidemia	82	19.3	162	16	1.2	0.9–1.6	.1
Cardiovascular/ cerebrovascular diseases	43	10.1	116	11.4	0.8	0.5–1.2	.4
Concomitant autoimmune pathologies	106	24.9	93	19.4	1.3	1–1.9	.04
Leisure activities	368	65.6	840	83	1.3	0.9–1.8	.09
Late diagnosis of RA	413	97.1	979	96.8	1.1	0.5–2.4	.7
Treatment with biological DMARD	104	24.4	265	26.2	0.9	0.6–1.1	.4
Psychological background							
Mood disorder	135	31.7	223	22	1.6	1.2–2.1	.001
Somatic symptom disorders	66	15.5	102	10	1.6	1.1–2.3	.003
Eating disorders	9	2.1	31	3	0.6	0.2–1.4	.3
Depression and anxiety	46	10.8	10	0.9	12.1	5.9–27.2	< .001
Sleep disorders							
Insomnia	151	35.5	226	22.3	1.9	1.4–2.4	< .001
HAQ							
Disability vs without disability	137	32.2	223	22	1.6	1.2–2.1	< .001
DAS28							
Activity vs no activity	249	58.6	469	46.4	1.6	1.2–2	< .001

DAS = Disease Activity Score; DMARD = disease modifying antirheumatic drugs; HAQ = Health Assessment Questionnaire; OR = odds ratio; RA = rheumatoid arthritis.
*Values of $P < .05$ were considered statistically significant.

Table 4. Multivariate analysis (logistic regression) of the associated risks factors

Variable	OR	95% CI	P value
Gender (women)	0.6	0.4–0.8	.004
Age (>50 y)	1.4	1.1–1.8	.015
DAS28	1.4	1.1–1.8	.001
Depression (anxiety)	9.6	4.7–19.5	<.001
Mood disorders	1.6	1.3–2.2	<.001
Living alone	0.4	0.3–0.5	<.001

DAS = Disease Activity Score; OR = odds ratio.

goodness-of-fit test (P value = 0.13), documenting an adequate adjustment of the selected predictors. In a complementary way, it was established that the proposed model correctly classified 72.7% of the individuals. The adjusted epidemiologic estimators are presented in detail in Table 4.

DISCUSSION

Currently, the treatment of RA focuses on pharmacologic management, since for more than a decade, the development of new technologies such as biological medicines has significantly impacted the activity of the disease, which is why efforts in research are concentrated on this area. Other relevant aspects that are part of the whole of the patient with chronic disease are comorbidities related to psychological disorders, among which are SDs. Thus, diagnosis and accompaniment to improve these problems become a joint work strategy that is finally articulated with pharmacologic treatment.

SDs affect global life and are determinants for an adequate quality of life because they are related to self-esteem, and even to some psychiatric pathologies. A study conducted in Cincinnati, United States, asked a group of rheumatologists whether they evaluated SDs during their RA consultation, and only 12% reported doing so. When investigating the causes, it was determined that the short consultation time and the discomfort of talking about sexuality with the patient, which has been reported in 61% of the patients, require improving communication between the patient and the health professional, in order to structure strategies where the integrality of care is guaranteed to confront this problem and generate spaces where they can be diagnosed and treat SDs.[16–20] The prevalence of SDs in a healthy population was 25%; this value in the population with RA reached 79%, which clearly indicates a comorbidity that affects physical performance impairing sexual function.[19] In the same way, the decrease in sexual desire was reported to be between 50% and 60%,[18] which differs considerably from what was observed in this study, since prevalences of 29.8% and 14.8%, respectively, were reported.

Josefsson and Gard, in a qualitative study, concluded that feeling "loved or being part of a relationship" is associated with sexual desire and self-esteem, consistent with the results of our patients, since cohabitation showed an association with the SDs,

directly and indirectly impacting the activity of the disease. In the same study, it was determined that follow-up with physiotherapy improved disability and sexual activity.[17] These findings are consistent with what is described by the proposal made by Pan American League of Associations for Rheumatology (REAL-PANLAR Project for the Implementation and Accreditation of Centers of Excellence in Rheumatoid Arthritis Throughout Latin America) with respect to centers of excellence, where multidisciplinary management is suggested for a comprehensive approach to the patient, which has shown improvement in all aspects, not only in the activity of the AR.[16,21,22]

When studying the possible causes, the physical and psychological variables become a fundamental pillar to explain SDs in RA. The physical difficulties that are associated with the activity of the disease are observed in the mobility at the time of the sexual act, hindering movements and positions, which are the result of joint pain or disability. The affectation of the physical and psychological variables is part of the RA cycle and its consequences, where if these are treated it improves both the activity and the comorbidities that are associated, after the diagnosis of RA.

Regarding psychological variables, mood and some psychiatric disorders such as depression impact the self-esteem of patients, which is finally observable as low socialization with others and the difficulties in maintaining an emotional relationship.[5,8,23] These findings are in agreement with those found in this study because a quite important association was identified with the presence or history of depression or anxiety.

Regarding sex, in this work and in all the studies reviewed, it is concluded that most of the SDs affect women. In addition to psychological factors, functional pathologies have been found that are risk factors for SDs. In a cohort of 52 women with RA, it was identified that 26.8% had some structural problem or injury in the genital tract, which is a relevant condition for sexual performance. In the same way, age becomes aggravating, because the hormonal issue plays a very important role in this problem, taking into account that in most publications, and even in this, they report more than 50% of the population above 50 years and therefore the presence of menopause and post-menopause.[24] In the same way, vaginal dryness is found in more than 90% of cases as reported by El Miedany et al, which is related both to the hormonal levels of menopause, as well as to the consumption of medications such as methotrexate and some anti-inflammatories used in the treatment of RA.[6] With regard to men, very specific symptoms such as erectile dysfunction and loss of sexual desire have been identified, which are associated with anti-inflammatory drugs and physical disability; in this study, premature ejaculation was present in 8.4% of the cases, higher than that reported by van Berlo (1.2%).[25] It is noteworthy in this study that dyspareunia occurred in 2.2% of men, which could also be explained by the lack of lubrication, which directly affects their partner; accordingly, pain in men can also be associated with disease activity, which causes painful symptoms in the pubis and hip.

Finally, it is important to approach SDs directly with the patient, offering confidence to discuss this topic. Thus, identification of these disorders is the beginning of multidisciplinary care for each health professional to integrate their role in the treatment of RA, under the guidance of the rheumatologist, who is responsible for leading the interventions guaranteeing comprehensiveness.

It could be suggested some strategies for the improvement of SDs include adherence to treatment and control of disease activity, psychological treatment for psychological alterations and relationship, use of lubricants for dryness, counseling to improve the process of intercourse, in both physical and emotional characteristics, and assessments by specialists for the management of erectile dysfunction as well as menopause.

CONCLUSIONS

It was possible to determine that the prevalence of SDs was 29.6% and predominantly female, slightly lower than those reported in the literature. Associated factors such as disease activity, mood disorders, psychiatric pathologies, coexistence with a partner (patient living alone), alcoholism, sedentarism, and concomitant autoimmune pathologies were identified. According to the earlier mentioned observations, it is important to consider that RA and SDs patients are a reality that impact their bio-psychosocial component, and that in most cases they are not relevant to treating physicians; so evaluation in a multidisciplinary approach can be suggested, as well as improvement in the communication channels between the health professional and the patient, in order to identify associated risk factors and to be able carry out early intervention.

Limitations

This study carried out an evaluation on admission of patients diagnosed with RA, without knowing the evolution of SDs after initiating both interdisciplinary and pharmacologic treatment; so the behavior of this type of pathology must be monitored and presented. In the same way, without using the scales for the diagnosis of SDs, however, we consider the experience in sexual and reproductive health as a strength of the study.

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