VOLUME-7, ISSUE-1, JANUARY-2018 • PRINT ISSN No 2277 - 8160

Original Research Paper

Rheumatology

THE RELATIONSHIP BETWEEN ILLNESS PERCEPTION, EDUCATION, HEALTH ASSESSMENT AND DISEASE ACTIVITY IN RHEUMATOID ARTHRITIS: A CROSS-SECTIONAL STUDY

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ABSTRACT

Objectives. Illness perception of symptoms and disease control in rheumatoid arthritis (RA) is crucial in the evaluation of patients' clinimetry. We investigate in a cross-sectional study the relationship between illness perception, gender, level of education, health assessment, disease duration and disease activity score in RA patients.

Methods. Fifty-five patients with RA were evaluated. The illness perception was measured using the Revised Illness Perception Questionnaire (IPQ-R), which represents an assessment about the perceived symptoms (PS), perceived control (PC) and perceived causes of RA. Age, gender, disease duration, education (years at school), HAQ and DAS28 were obtained. The data were examined by test T or Spearman. The significance level was <0.05.

Results. Patients were predominantly older, female, mean age of 55.7 years and mean disease duration of 12.7 years. Gender was not associated with PS (p=0.76) or PC (p=0.69). Education was not associated with HAQ (p=0.79), DAS28 (p=0.06), PS (p=0.35) or PC (p=0.96). Long disease duration was associated with high PS (p=0.02), but not with PC (p=0.48). DAS28 was significantly correlated with PS (p<0.01) but not with PC (p=0.32). HAQ was associated with PS (p=0.02) but not with PC (p=0.24). Perceived causes of disease were stress in 50.9% of patients and hereditary or excess of work in 40%.

Conclusion. Our results indicate that perceived symptoms in RA patients were not associated with education or gender, but suggest that patients´ perception of their illness was related to disease severity as evidenced by long disease duration, more disability and higher disease activity.

KEYWORDS :

INTRODUCTION

Illness perception is the individual beliefs about the nature of his or her condition, which create a framework for understanding the disease by the patient (1). After diagnosis sick people created their own cognitive representation of a disease that function as a guide in regard to attitude toward one´s disease and even the beliefs about one´s disease (1,2). The patient's illness perception probably determines the ability of patients to cope with disease as well as treatment compliance (3,4,5). Illness perception in the same way may explain the patient to a chronic condition such as rheumatoid arthritis (RA) and coping strategies and illness perceptions contribute to health outcome in patients with RA (6). Strong illness identity, passive coping, belief in a long illness duration as well as in a more severe outcome were associated with worse outcome on measures of functioning in RA patients (6,7). Stronger control beliefs correlate negatively with objective measures of disease severity such as erythrocyte sedimentation rate, grip strength and length of morning stiffness (8). Patients´ beliefs about their RA are associated with disability and quality of life evaluated by Short-Form Health Survey Questionnaire (SF-36) and The Health Assessment Questionnaire (HAQ) (8). Psychological distress in RA appears highly associated to patients´ illness perception and many studies are related to this situation (2,9,10). Psychological distress was associated with functional disability and disease activity score (DAS28), and perceptions of higher treatment control were associated with higher positive outlook, but only for those with low DAS28 (9). There are studies confirming the links between the beliefs about RA and levels of depression (2,10,11).

Therefore, studies have searched for links between illness perception and disability, outcome, disease activity, quality of life and coping with disease. Most of them studied psychological

distress and levels of depression in RA patients in association with illness perception. These studies showed a strong association between patient beliefs, representation of the disease, and the conditions previously described.

Illness perception of symptoms and the beliefs about controllability of disease is crucial in the evaluation of patient's clinimetry in RA as disease activity score and health assessment questionaries. We investigate the possible relationship between gender, level of education, health assessment, activity score, disease characteristics and illness perception in rheumatoid arthritis (RA) patients

METHODS

Study population

Data were obtained from 55 patients with RA fulfilling the American Rheumatism Association 1987 revised criteria for the classification of RA (11). All study participants were recruited from patients receiving care and followed in the Rheumatology Division, Sorocaba Hospital, at the Catholic University of São Paulo. The study protocol was approved by the University and Hospital´s Ethics Committees. Patients gave informed consent to participate in this study.

The Revised Illness Perception Questionnaire (IPQ-R)

Patients were asked to complete questionnaire measuring illness perception. The IPQ-R in a Portuguese version designed for RA patients was applied. The IPQ-R is used for studying cognitive representation of a disease (13). The IPQ-R provides a more comprehensive assessment of the key components of patients´ perception of illness (13). It was developed and revised to provide a quantitative assessment of the nine components of the illness representation: identity, timeline (acute/chronic), consequences, personal control, treatment control, illness coherence, timeline cyclical, emotional representations and causes. For identity score is used yes = 1 or no = 0. The following scale is used for each item: strongly disagree = 1; disagree = 2; neither agree nor disagree = 3; agree = 4; strongly agree = 5 and a reverse score is used for items 1,4,8,15,17,18,19,23,24,25,26,27 and 36. High scores on the identity, timeline, consequences and timeline cyclical represent strong beliefs about the number of symptoms ascribed to the illness, the chronicity of the condition, the negative consequences of the disease, and the cyclical nature of the condition. We used this section to measure the perceived symptoms (PS). High scores on the personal control, treatment control, and illness coherence dimensions represent positive beliefs about the controllability of the illness and a personal understanding of the condition. We used this section to measure the perceived control (PC). The last section measures and refers to the causes of RA as perceived by the patient.

Demographic and clinical characteristics

Age, gender, disease duration (years), education (years at school) were obtained at study visit. During this same study interview a Portuguese version of the Health Assessment Questionnaire (HAQ) (14), and Disease Activity Score (DAS28) (15,16) were also evaluated.

Statistical analyses

Description of frequency of relative and absolute distribution of the variables studied was first realized. Description of mean and standard deviation of the variables studied was also performed. Then, analysis of probabilistic distribution of variables was studied performing Shapiro-Wilk test for decision about appropriate use of parametric or non-parametric tests.

To access differences in education, HAQ, DAS28, disease duration, perceived symptoms and perceived control, Spearman´s correlation test was performed. The test of mean difference for independent samples (test t) was performed to access the difference between gender, perceived symptoms and perceived control. The significance level was considered <0.05.

RESULTS

Table 1 shows the demographic and clinical characteristics of the RA patients studied. In general, patients were near 55 years of age, predominantly female (69% of patients) and with long disease duration (mean of 12.7 years). Patient mean education measured as years at school was 5.6 years. Mean of Activity score (DAS28) and Health assessment (HAQ) were 4.2 and 1.5, respectively. The mean score of PS was 58.8 with a minimum of 49 and a maximum of 75. The mean score of PC was 71.4 with a minimum of 50 and a maximum of 95.

Table 2 shows the relationship between gender, education, disease duration, health assessment (HAQ), disease activity (DAS28) and scores of PS and PC in RA patients. Gender was not associated with PS (p=0.76) or PC (p=0.69). There was no relationship between education and HAQ (p=0.79), PS (p=0.35) or PC (p=0.96). There is a tendency for education to be associated with DAS28 (p=0.06). Long disease duration, higher scores in disability (HAQ) and disease activity (DAS28) were all significantly associated with PS (p<0.05) (Figures 1, 2 and 3). On the other hand disease duration was not associated with PC (p=0.48) as well as HAQ and DAS28 were not correlated with PC, p=0.24 and p=0.32, respectively. The main cause of disease reported by the patients was stress of life in 50% of patients followed by hereditary and excess of work in 40%.

In summary, strong beliefs about the number of symptoms ascribed to the illness, the chronicity of the condition, the negative consequences of the disease, and the cyclical nature of the condition scored as perceived symptoms were positively associated with disease duration, disability and disease activity.

DISCUSSION

In this cross-sectional study of patient illness perception as a representation of strong beliefs about the number of symptoms ascribed to the illness (identity), the chronicity of the condition (timeline), the negative consequences of the disease (consequences), and the cyclical nature of the condition (timeline cyclical) that was scored as perceived symptoms and beliefs about the controllability of the illness (personal control and treatment control) and a personal understanding of the condition (illness coherence and emotional representation) scored as perceived control were compared with demographic and clinical measures as gender, education, disease duration, disability (HAQ score), and disease activity (DAS28).

We found evidence of a positive association between beliefs evaluated by perceived symptoms and long disease duration, higher disability and increased disease activity. There is no association of some socio-demographic characteristics as gender or education with illness perception. In one recent study (18) has been demonstrated that total DAS28 produced significant but weak association with illness consequences and a stronger correlation with identity. Low illness coherence was associated with higher tender joint count, and acute phase reagents as erythrocyte sedimentation rate (ESR) and C reactive protein (CRP) were strongly correlated with identity, coherence, and CRP was significantly correlated with consequences domain (18). In the same study (18) a visual analog scale (VAS) of global well-being was associated with consequence, personal control, concern, identity, and emotional representation. This study has shown that strong beliefs in negative consequence of disease together with beliefs of more severe symptoms, were associated with disease activity score (18). In other study (10) was found that perceptions of greater treatment control were associated with greater positive outlook, but only for those with low DAS28. As described by Graves, et al. (8) higher disability scores were associated with beliefs about identity and consequences (perceived symptoms) and stronger control beliefs were associated with lower disability. In this same study disease activity showed no associations with illness beliefs. We are in agreement with the previous authors that these beliefs are demonstrating logical interrelationship in the way that those patients with long RA disease duration may anticipate more negative consequences. As illness perception change with time as disease change overtime the utility of interventions and coping

strategies to modify illness perception and change variables like HAQ or DAS28 are better studied in a longitudinal study. We choose correlate scores or a set of measures of illness perception as perceived symptoms and perceived control with scores or a set of parameters like HAQ and DAS28 for a more global variable correlation. In our view the study´s main limitation is its cross-sectional design which precludes strong cause-effect inferences. The generalizability of our results is also limited by the relatively small sample of RA patients. On the other hand as the sample was obtained from one center less chance of confounding and more confidence in data was possibly anticipated. Future studies examining illness perception in the RA patients will delineated prospectively changes in the illness perception and strategies to copy with the different parameters of symptoms and control perception of disease. In conclusion, our findings suggest that patients´ perception of their illness was related to disease severity as evidenced by long disease duration, more disability and higher disease activity.

Ethical approval: All procedures performed in this study involving human participants were in accordance with the ethical standards with the institutional and national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

Table 1. Demographic and clinical characteristics of the rheumatoid arthritis patients studied

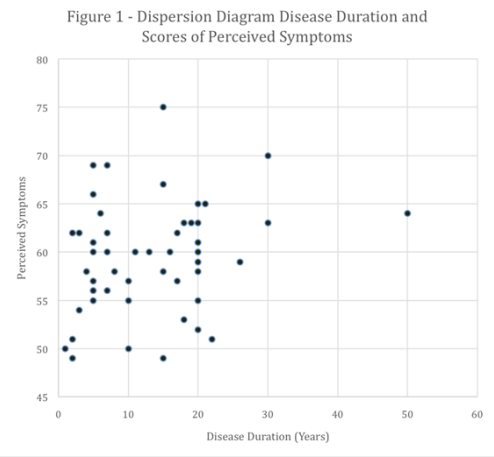
Variables	Statistics
Age, years SD	55.7 7.7
Gender, % women	69
Disease duration, years SD	12.9 9.2
Education, years SD	5.6 3.4
Activity score, DAS28	4.2 1.5
Health assessment, HAQ	1.5 0.8
Illness Perceptions	
Score of Perceived Symptoms	58.8 5.7
Score of Perceived Control	71.4 8.9

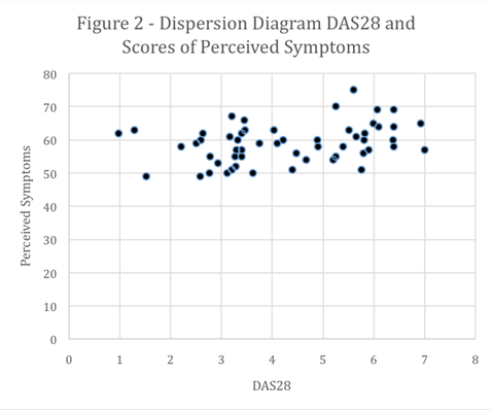
All values are expressed as mean SD

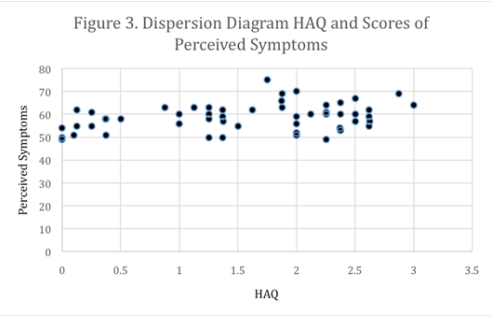
Table 2. The association between gender, education, disease duration, health assessment, disease activity and scores of perceived symptoms and perceived control in rheumatoid arthritis patients

	Perceived Symptoms	Perceived Control
Gender	NS	NS
Education, years at school	NS	NS
Disease duration, years	p=0.02	NS
Health assessment, HAQ	p=0.02	NS
Disease activity, DAS28	p=0.01	NS

NS = non-significant







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