



History of depressive episodes as a risk factor for illness severity in early inflammatory arthritis

Karl Looper^{a,*}, Sally Mustafa^a, Phyllis Zekowitz^a, Margaret Purden^b, Murray Baron^c and McGill Early Arthritis Research Group¹

^a Department of Psychiatry, Jewish General Hospital and McGill University, Montreal, Canada

^b Department of Nursing, Jewish General Hospital and McGill University, Montreal, Canada

^c Department of Rheumatology, Jewish General Hospital and McGill University, Montreal, Canada

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ABSTRACT

Objective: Psychosocial research in arthritis consistently demonstrates a relationship between depression and disease characteristics such as severity of illness and physical disability. In this study, we examine how a history of clinical depression identified through diagnostic interviews influences disease outcome measures in patients with early inflammatory arthritis (EIA) in the absence of current depression.

Methods: Patients in the early phase (more than 6-weeks, less than 1-year duration) of inflammatory arthritis were recruited from a larger EIA registry, which recorded sociodemographic data, current depressive symptoms and measures of disease severity. Current and history of major depression was assessed by a structured clinical interview. Eighty-one patients without current major depression were divided into two groups: 28 with and 53 without a history of depression.

Results: There were no significant differences between the two groups in age, sex, education, income, or level of current depressive symptoms. Compared with patients with no history of major depression, those with a history of depressive episodes had higher self-ratings of disease activity and were assessed as having more severe disease and poorer physical functioning by their physicians.

Conclusion: This study indicates that a history of major depression represents a risk factor for disease severity in EIA. This may reflect an enduring physiological effect of depression that influences subsequent inflammatory arthritis or an underlying shared process between these two disease entities.

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Introduction

Inflammatory arthritis (IA) consists of a spectrum of rheumatic illness characterized by persistent inflammation and damage in multiple joints causing pain, physical disability and reduced quality of life. The literature regarding mental health issues in IA consistently demonstrates a relationship between depression and illness severity

measures such as symptom burden, physical disability and long-term outcome [1–3]. In addition, there is some indication that even a history of depression confers a risk of adverse illness outcomes [4–6]. Residual depressive symptoms not meeting a formal diagnosis of major depression have been associated with increased levels of pain in patients with rheumatoid arthritis (RA) [7]. Research by Conner et al. [8] and Zautra et al. [9] found that even when controlling for residual depressive symptoms, a history of past depression was associated with both pain and mood disturbances in patients with RA. Similar results were reported in a study of pain in osteoarthritis patients undergoing hip arthroplasty [10]. These studies suggest that a history of depression even in the absence of a current diagnosis may present a risk of adverse illness outcomes in patients with arthritis. However, this research has been carried out in chronic arthritis populations which presents the methodological problem of confounding effects of pain and depression, as well as the difficulty in establishing that the history of depression truly predates the inflammatory illness. We investigate this possibility in a sample of patients in the early phase of IA (EIA), which addresses this methodological issue. This study tests the hypothesis that a history of major depression in EIA will be associated with greater disease

* Corresponding author at: Department of Psychiatry, McGill University Jewish General Hospital, Montreal, Quebec, Canada H3T 1E2. Tel.: +1 514 340 8222; fax: +1 514 230 8126.

E-mail address: karl.looper@mcgill.ca (K. Looper).

¹ Michael Starr, MD⁴, Michel Gagné, MD⁴, Michael Stein, MD⁴, Harb Kang, MD⁴, Morton Kapusta, MD^{1,2,4}, François Couture, MD⁴, Mary-Ann Fitzcharles, MD⁴, Bruce Garfield, MD⁴, Henri A. Ménard, MD⁴, Laeora Berkson, MD³, Christian Pineau, MD⁴, Andrzej Gutkowski, MD⁴, Michel Zummer, MD⁵, Jean-Pierre Mathieu, MD⁵, Suzanne Mercille, MD⁵, Sophie Ligier, MD⁵, Jiri Krasny, MD⁴, Carole Bertrand, MD⁵, Sai Yan Yuen, MD⁵, Jan Schulz, MD⁴. ¹Division of Rheumatology, Jewish General Hospital and McGill University, Montreal, Quebec, Canada; ²Department of Mathematics, McGill University, Montreal, Quebec, Canada; ³Division of Rheumatology, Jewish General Hospital; ⁴Division of Rheumatology, McGill University, Montreal, Quebec, Canada; ⁵Service de rhumatologie, Hôpital Maisonneuve-Rosemont, Montreal, Quebec, Canada.

severity, pain, symptom burden and functional limitations as reported by the patient and the rheumatologist.

Method

Participants

A total of 104 patients with EIA were recruited from the McGill Early Arthritis Registry (McEAR) between March 2006 and May 2009. Referrals to the McEAR come from 21 rheumatologists working in Montreal, Canada. Patients are included if they have newly diagnosed IA, defined as one or more inflamed joints of a minimum duration of 6 weeks to a maximum duration of 12 months. Patients must be 18 years or older, speak English or French and agree to periodic physical and laboratory examinations as well as to completing questionnaires assessing demographics, disability, pain and psychosocial factors related to their illness. Exclusion criteria include clinical evidence of remote joint damage suggestive of a previous episode of RA, any rheumatic diagnosis other than RA or undifferentiated IA, severe functional limitation from a disease other than arthritis and any disorder that compromises the ability to give informed consent. Patients in the registry provide an extensive clinical history, undergo a physical examination and complete a series of self-report questionnaires related to their psychosocial and clinical health status at baseline and periodic follow-up assessments. All patients in the McEAR signed an informed consent, and the study was approved by the institutional review boards of McGill University and the Jewish General Hospital.

Disease outcome measures

Physical functioning

Physical functioning was measured with the Stanford Health Assessment Questionnaire–Disability Index (HAQ-DI). This index measures the level of disability associated with arthritis. It is a brief patient self-report questionnaire that is a good predictor of disease course and is sensitive to change in early arthritis. It is a measure developed specifically for use in arthritis and has sound psychometric properties [11,12]. The HAQ-DI consists of 20 questions assessing eight domains, including dressing, standing, eating, walking, toileting, reach, grip and instrumental activities. The HAQ-DI provides a mean total score ranging from 0 (*no disability*) to 3 (*severe disability*).

Disease activity

Disease activity was first assessed using joint count. The number of swollen and tender joints was determined according to the American College of Rheumatology joint count of 66 swollen joints and 68 tender joints [13,14]. In addition, rheumatoid factors and the acute-phase reactant C-reactive protein (CRP) levels were measured. The Disease Activity Score in 28 joints (DAS28) was calculated using the CRP [15–18]. Overall disease severity was rated by the rheumatologist using a single 11-point numerical rating scale (NRS) scale, where 0 rating meant “No arthritis activity” and 10 meant “Worst arthritis.”

The McGill Range of Motion Index (McROMI), which rates global limited range of motion (ROM) in patients with arthritis, was developed by our research group [19] and was used in this study. The McROMI relies only on the estimation of joint ROM and can be performed quickly by allied health professionals. It demonstrates good construct validity as it correlates with measures of joint inflammation and with measures of function.

Global measures of disease activity

Patient global assessment of activity was done using an 11-point NRS ranging from 0 (*best*) to 10 (*worst*) with reference to the past week. Physicians were asked to use the same type of 11-point NRS to rate the patients' overall level of disease activity.

Pain

The Short-Form McGill Pain Questionnaire (MPQ) [20,21] is a patient report that was used in this study to measure pain severity. It contains 11 self-rated items related to the sensory dimension of pain and four related to the affective dimension. Each descriptor is ranked on a four-point intensity scale (0–3; *none* to *severe*), and total scores range from 0 to 45. The MPQ has been extensively used and has sound psychometric properties. For the purposes of the present study, the total pain score, which is the sum of 11 sensory and four affective items ranging from 0 (*no pain*) to 45 (*severe pain*), was used.

Psychosocial measures

Center for Epidemiologic Studies–Depression Mood Scale

The Center for Epidemiologic Studies–Depression Mood Scale (CES-D) is a 20-item self-report scale designed to measure depression in the general population [22]. Answers are based on how frequently in the previous week each item was experienced. Scores range from 0 to 60, with higher scores indicating greater depression. A cutoff score of 16 is the requirement for identifying depression, but in chronic disease such as RA, cutoffs of 19 have been recommended [23,24]. In our study, we used the total score to measure symptom severity between groups with and without past depression.

Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition

Depression history was measured using the Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (SCID-I) [25]. SCID assessments were done by trained interviewers at the time of the baseline data collection. The interviewers were blind to the current and past psychiatric status of the subjects. A participant is considered positive for a history of major depression if he/she experienced depressed mood and/or diminished interest/pleasure in all or almost all activities most of the day, nearly every day for at least two weeks. In addition, the participant should report at least three (if both depressed and having diminished interest) or four (if either depressed or having diminished interest) of the following symptoms: loss or gain in weight or appetite, insomnia or hypersomnia, psychomotor retardation or agitation, fatigue or lack of energy, feelings of worthlessness or inappropriate guilt, lack of concentration or indecisiveness and suicidal ideation. At least one depressive episode and not simple bereavement should be detected in order for the participant to be considered having past major depressive disorder.

Statistical analysis

Descriptive statistics were used to summarize the baseline characteristics of the EIA patients. Independent samples *t* test or χ^2 test were performed to detect significant differences between EIA patients with and without past major depression episodes. All statistical tests were two sided, and a *P* value of .05 was considered significant. Multiple linear regressions were used to demonstrate the relationship between a history of depression and the primary illness measure while controlling for relevant sociodemographic variables and the current level of depressive symptoms. All statistical analyses were performed using SPSS, version 17 (SPSS, Chicago, IL, USA).

Results

All participants (*n*=23) with current depressive episode as detected by the SCID were excluded from the analysis. The remaining 81 study subjects were divided into two groups: 53 participants with no past major depressive episodes and 28 with one or more past major depressive episodes.

Table 1 shows the difference in demographic characteristics between patients with or without history of major depression.

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