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Original article

Sarar cohort: disease activity, functional capacity, and radiological damage in rheumatoid arthritis patients undergoing total hip and knee arthroplasty



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ABSTRACT

Objectives: The Sarar cohort consists of patients with rheumatoid arthritis and juvenile idiopathic arthritis who underwent hip or knee arthroplasties at hospital SARAH-Brasília. The objective of this study was to evaluate clinical and laboratory factors associated with disease activity, functional capacity and radiological damage in rheumatoid arthritis patients, participants in this cohort.

Methods: Cross-sectional study, with data collection achieved from medical records review.

Results: Thirty-two patients were included, with a mean time of disease onset of 240 months. Nineteen patients underwent total knee and 17 total hip arthroplasty. There was a positive correlation between maximum dose of methotrexate and Clinical Disease Activity Index ($R = -0.46, p = 0.011$), and a negative one with Simplified Erosion and Narrowing Score ($R = -0.58, p = 0.004$). Simplified Erosion and Narrowing Score values were higher in patients with rheumatoid factor ($p = 0.005$) and anti-cyclic citrullinated peptide antibody 3 positivity ($p = 0.044$), in those with higher rheumatoid factor ($p = 0.037$) and anti-cyclic citrullinated peptide antibody 3 ($p = 0.025$) titers, and lower in patients with family history of rheumatoid factor ($p = 0.009$). Health Assessment Questionnaire values were higher in older patients ($p = 0.031$). In multiple linear regression, only “maximum dose of methotrexate” and “family history” remained with significant association with Simplified Erosion and Narrowing Score ($r^2 = 0.73, p < 0.001$ for both variables). In the model evaluating “Clinical Disease Activity Index” only “maximum dose of methotrexate” remained significantly associated ($r^2 = 0.35, p = 0.016$).

Conclusion: In the Sarar cohort, clinical and laboratory factors were related to disease activity, functional capacity and radiological damage, similar to studies evaluating patients with lower disease duration.

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Coorte Sarar: atividade de doença, capacidade funcional e dano radiológico em pacientes com artrite reumatoide submetidos à artroplastia total de quadril e joelho

R E S U M O

Palavras-chave:

Artrite reumatoide
Artroplastia
Dano radiológico
Capacidade funcional

Objetivos: A coorte Sarar é composta por pacientes portadores de artrite reumatoide (AR) e artrite idiopática juvenil (AIJ) submetidos a artroplastias de quadril e joelho no hospital SARAH-Brasília. O objetivo deste estudo foi avaliar fatores clínicos e laboratoriais associados à atividade de doença, capacidade funcional e dano radiológico em pacientes com AR, participantes dessa coorte.

Métodos: Estudo transversal, com coleta de dados em revisão de prontuário.

Resultados: 32 pacientes foram incluídos, com tempo médio de início da doença de 240 meses. Dezenove pacientes foram submetidos a ATJ e 17, a ATQ. Foi encontrada correlação positiva entre dose máxima de metotrexato (MTX) durante a evolução e *Clinical Disease Activity Index* (CDAI) ($R = -0,46$, $p = 0,011$) e negativa com *Simplified Erosion and Narrowing Score* (SENS) ($R = -0,58$, $p = 0,004$). Valores de SENS foram maiores nos pacientes com fator reumatoide (FR) ($p = 0,005$) e anticorpo anti-peptídeo cíclico citrulinado 3 (anti-CCP3) positivo ($p = 0,044$), nos com maiores títulos de FR ($p = 0,037$) e Anti-CCP3 ($p = 0,025$) e menores nos pacientes com história de familiar de AR ($p = 0,009$). Valores de HAQ foram maiores em pacientes mais idosos ($p = 0,031$). Na regressão linear múltipla, somente “dose máxima de MTX” e “história familiar” permaneceram com associação significativa com SENS ($r^2 = 0,73$, $p < 0,001$ para ambas as variáveis). No modelo que avaliou “CDAI”, apenas “dose máxima de MTX” permaneceu com associação significativa ($r^2 = 0,35$, $p = 0,016$).

Conclusão: Na coorte Sarar, fatores clínicos e laboratoriais estiveram relacionados à atividade de doença, capacidade funcional e dano radiológico, semelhantemente a estudos que avaliaram pacientes com menor tempo de doença.

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Introduction

Rheumatoid arthritis (RA) is a common disease in Brazil, affecting 0.2–1% of the Brazilian population.¹ Brazilian guidelines for treating RA recommend early use of at least one disease-modifying anti-rheumatic drugs (DMARDs), with or without the use of corticosteroids, since the onset of the disease.² The main objective is to prevent or at least slow the progression of radiographic joint damage, which can lead to deformities and functional disability, with reduced quality of life and work capacity. However, the treatment of RA is often suboptimal in our environment³ and, therefore, many patients develop secondary osteoarthritis, requiring surgical treatment with total arthroplasties, significantly increasing health care costs.⁴

The SARAH Network is a reference center for rehabilitation in Brazil, with units in several Brazilian states, including the Federal District. In this context, the institution focuses on the treatment of patients with RA or juvenile idiopathic arthritis (JIA) at an advanced stage, with permanent sequelae of the disease by means of orthopedic surgeries and rehabilitation.

The Sarar cohort consists of adult patients of all age groups, patients with long-standing RA or JIA, with great functional disability and extensive radiological damage, participating in a rehabilitation program and having orthopedic treatment for sequelae of the disease in the hospital SARAH-Brasília. Its goal is to evaluate these patients' long-term progress after undergoing primary or review total hip and/or knee replacement.

Patients are usually referred from public or private rheumatology clinics, for rehabilitation. The inclusion of patients in the cohort began in October 2008 and ended in January 2013. After the initial inclusion, patients were evaluated in some of their follow-up visits with the Orthopedics team.

The clinical characteristics of patients with RA who are candidates for orthopedic surgery can influence the degree of disability and instability at work,⁵ inflammatory activity and radiological damage.⁶ Therefore, the objective of this study is to evaluate the clinical, radiological and laboratory profile of RA patients followed by the Sarar cohort, and evaluate which factors are associated with disease activity, functional capacity and radiological damage.

Methods

Study design

Cross-sectional analysis of data from the Sarar cohort with data collection achieved from medical chart review.

Inclusion and exclusion criteria

We included all patients aged ≥ 18 years admitted at the Adult Orthopedics and Neurosurgery Department to undergo total hip (THA) or knee (TKA) arthroplasty at the hospital Sarah-Brasília, who had RA with diagnosis established according to the criteria of the American College of Rheumatology.⁷ As

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