

Ocular manifestations in Rheumatoid Arthritis

ABSTRACT

Aim: The aim of this study was the identification of ocular manifestations in patients with rheumatoid arthritis and their assessment in relation to immunological alterations.

Methods: This is a prospective study involving 70 patients with rheumatoid arthritis. All patients fulfill the criteria of American College of Rheumatology and the European League against Rheumatism for the diagnosis of rheumatoid arthritis. The patients were referred to the Ophthalmologist for examination of the eyes and interpretation of the related findings.

Results: Ocular injuries were identified 13 (19%) of patients with rheumatoid arthritis. Keratoconjunctivitis sicca was identified in 9 (13%) patients, episcleritis in 2 (3%) patients and scleritis in 2 (3%) patients. Patients with positive rheumatoid factor and anti-cyclic citrullinated peptide, were 42 (100.0 %) of whom 16 (38.1 %) represent ocular injuries, while in the other group of 28 (100.0 %) patients seronegative only 3 (10.7 %) patients have ocular injuries.

Conclusion: Ocular manifestations are common in rheumatoid arthritis and have a wide spectrum. Keratoconjunctivitis sicca, episcleritis and scleritis are ocular manifestations than occur in rheumatoid arthritis. The most common ocular manifestation was keratoconjunctivitis sicca. Immunological alterations are important factors in ocular manifestation.

Keywords : ocular, keratoconjunctivitis sicca, episcleritis, scleritis,

INTRODUCTION

Rheumatoid arthritis is a systemic autoimmune and inflammatory disease that affects not only the articulations but also various organs. Ocular involvement is one of the extra-articular manifestation of rheumatoid arthritis and the cause of morbidity in these patients. The association of ocular lesions with rheumatoid arthritis has long been recognized. Ocular manifestations involved with rheumatoid arthritis are keratoconjunctivitis sicca, episcleritis, scleritis. The aim of this study was the identification of ocular manifestations in patients with rheumatoid arthritis and their assessment in relation to immunological alterations.

MATERIAL AND METHODS

This is a prospective study involving 70 patients with rheumatoid arthritis. All patients fulfill the criteria of American College of Rheumatology and the European League against Rheumatism for the diagnosis of rheumatoid arthritis (1). The patients in this study were recruited from from a university hospital center and outpatient consultations in the Rheumatology clinic at the University Hospital Center Mother Teresa in Tirana, Albania. Ophthalmological exam obtained : the lacrimal secretion was measured in all patients by Schirmer's test. The diagnosis of dry eye was based on the American-European Consensus Criteria for Sjögren's syndrome (2). It is performed by first drying the tear film, then inserting a Schirmer strip into the lower conjunctival cul-de-sac toward the temporal aspect of the lower lid. After 5 minutes, if the strip measures less than 10 mm of wetting, the lacrimal glands are not functioning correctly. Ophthalmoscopic examination of fundus was done in every patient. Scleritis and episcleritis are distinguished on the basis of appearance and ophthalmoscopic examination. The diagnosis of episcleritis and scleritis is mainly clinical. The patients were referred to the Ophthalmologist for examination of the eyes and interpretation of the related findings.

To determine if alterations of immunological examinations are associated with ocular manifestation, patients were classified into two groups. The first group included patients with

rheumatoid factor and anti-cyclic citrullinated peptide, the second group included patients seronegative.

Statistical analysis

Continuous variables were expressed as mean values and their respective standard deviations. Categorical variables were presented in absolute values and their respective percentages. Differences between the categorical variables were assessed with Chi square test. The P value $\leq 0,05$ was considered a statistically significant. Data were analyzed using the Statistical Package for the Social Sciences software, version 19.0

RESULTS

The mean ($\pm$ SD) age of the patients was 46.17 ($\pm$ 8.75) years. The mean ($\pm$ SD) duration of disease was 9.21 ($\pm$ 3.54) years. Female patients are 52 (74.3%) and male patients are 18 (25.7%). Ocular injuries were identified 13 (19%) of patients with rheumatoid arthritis. Keratokonjunktivitis sicca, was identified in 9 (13%) patients, episcleritis in 2 (3%) patients and scleritis in 2 (3%) patients. (table 1). Patients with positive rheumatoid factor and anti-cyclic citrullinated peptide, were 42 (100.0 %) of whom 16 (38.1 %) represent ocular injuries (group 1), while in the other group (group 2) of 28 (100.0 %) patients seronegative only 3 (10.7%) patients have ocular injuries (table 2). Ocular involvement in patients with positive immunological tests are significant versus patients with negative immunological tests $p < 0.01$

DISCUSSION

In our study ocular manifestations were found in 19 % of patients. Approximately 25% of patients with rheumatoid arthritis have ocular symptoms (3). The most common manifestation of ocular involvement in our study was keratoconjunctivitis sicca in 13 % of patients. The incidence of keratoconjunctivitis sicca is between 15 % to 25 % , in literature (4,5). Keratoconjunctivitis sicca affects at least 10% of patients (6). Keratoconjunctivitis sicca is the most frequent complication in rheumatic diseases and is particularly common in rheumatoid arthritis and Sjögren syndrome (7). Episcleritis and scleritis are described in patients with rheumatoid arthritis. In the present study 2 % of patients had scleritis and 2 % of patients had episcleritis. In others study scleritis and episcleritis in patients with rheumatoid arthritis is found at a prevalence rate of 4 to 10 percent (4). The prevalence of scleritis on rheumatoid arthritis is reported to be 0.67% to 6.3% (8). According to this study in patients with rheumatoid factor and anti-cyclic citrullinated peptide positive ocular injuries occurred frequently in 38,1% patients vs group of patients seronegative and we found correlation. In other study is found that the combined presence of anti- cyclic citrullinated peptide antibodies and rheumatoid factor had more severe ocular involvement compared to those who were negative for these antibodies (9) This indicates that the immune system is implicated in the development of ocular injuries

Study limitations

The patients in our study were selected from a university hospital, which could potentially be prone to selection bias by including patients with more severe stages of the disease compared to patients at the community level. However, we tried to minimize this bias by recruiting also all the patients from the hospitals outpatient consultation clinics.

Table 1. Ocular manifestations in Rheumatoid Arthritis

Condition	Number of patients	Percentage (%)
Keratokonjunktivitis sicca	9	13

Episcleritis	2	3
Scleritis	2	3

Table 2. Ocular manifestations by immunological alterations

Patients group	Totali	Normale	Oculare manifestations	p-value
Grupi 1	42 (100.0)*	26 (61.9)	16 (38.1)	0.01
Grupi 2	28 (100.0)	25 (89.3)	3 (10.7)	

*Absolute numbers and row percentage (in parentheses).

CONCLUSIONS

Ocular manifestations are common in rheumatoid arthritis and have a wide spectrum. Keratoconjunctivitis sicca, episcleritis and scleritis are ocular manifestations than occur in rheumatoid arthritis. The most common ocular manifestation was keratoconjunctivitis sicca. Immunological alterations are important factors in ocular manifestation.

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