

A prospective hospital based study showing prevalence of eye manifestations in patients having systemic inflammatory autoimmune disease

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Abstract

Aim: To outline several common ocular complications and their prevalence in patients with systemic inflammatory autoimmune disease. **Material and Methods:** The study included 135 patients having systemic inflammatory autoimmune disease (rheumatoid arthritis) who attended ophthalmology out patient department in Govt. Medical College Jammu. The patients underwent detailed ocular examination, slit lamp biomicroscopy, ophthalmoscopy. The tear function of all the patients was assessed using Schirmer's test, tear film breakup time and ocular surface staining. **Results:** Fifty three (39%) patients out of the 135 patients had ocular manifestations of rheumatoid arthritis. Dry eye was the most common manifestation which was seen in about 28 patients (53%). The ocular manifestations were more common in females (78%). The manifestations were bilateral in 45 patients (85%). Ten patients (19%) had features of scleritis, three (6%) with episcleritis, 10 patients having anterior uveitis (19%) and other manifestations peripheral ulcerative keratitis (PUK), retinal vasculitis, keratitis contributed 1% each or less. **Conclusion:** Ocular manifestations contribute significantly to the extra articular manifestations of the Rheumatoid Arthritis. Dry eye is the commonest complication. There was a female preponderance in the study and also the manifestations were more frequently found bilaterally.

Keywords: Ocular manifestations, Rheumatoid Arthritis, Episcleritis, Uveitis.

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Introduction

Rheumatoid Arthritis (RA) is an auto immune, systemic inflammatory disease with crippling arthritis as a common feature. 10-40% of the patients present with extra-articular manifestations. Ocular manifestations in rheumatoid arthritis are mainly keratoconjunctivitis sicca (KCS), episcleritis, scleritis, anterior uveitis, corneal involvement, retinal vasculitis [1-3]. Anterior eye involvement is most frequently seen in clinical practice [4]. KCS is common in individuals with RA and is often the initial manifestation. KCS appears as a result of the decreased secretion of tears from the main and accessory lacrimal glands. [5,3]. Scleritis can be anterior or posterior. Anterior can be diffuse, nodular, necrotizing with inflammation and necrotizing without inflammation. [6]

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Material and Methods

A cross sectional study was done on patients who were either referred from rheumatologists to the department of Ophthalmology Govt. Medical College Jammu or who had a history of RA as a routine checkup. The study was conducted irrespective of age, sex, duration, severity of disease and the ocular examination was performed. The study was carried over a period from June 2017 to April 2019. A total of 135 patients with rheumatoid arthritis were investigated for ocular complications after informed written consent. ACR (American College of Rheumatology) criteria was used for diagnosis of RA.

Ethical consideration: Clearance from the institute ethical committee, University of Jammu was obtained. The participants were informed about the purpose of the study and its consequences, and confidentiality of data was assured. Informed consent was obtained from all participants.

Inclusion Criteria: All the patients diagnosed with rheumatic disease were studied.

Exclusion Criteria: Patients with uncontrolled diabetes, hypertension, active tuberculosis, any other infective etiology or any predisposing factors affecting ocular findings. Detailed history, systemic and ocular examination was performed. Ocular examination included documentation of best corrected visual acuity, examination of ocular adnexa, checking extraocular movements, pupil examination, anterior segment examination with slit lamp biomicroscopy. Intraocular pressure measurement with non contact tonometer, tear film adequacy using Schirmer's test, its integrity was analysed during tear film breakup time and finally 1% Rose Bengal test was done for ocular surface

staining. A complete hematological profile, a steroid work up to rule out conditions (like uncontrolled diabetes, hypertension, active tuberculosis) that could be aggravated by the institution of steroids as a treatment for the ocular condition was done.

Statistical Analysis- All the data was analysed using statistical software package SPSS version 21.0. The results for categorical variables were obtained in percentages and frequencies.

Observations & Results

Out of 135 rheumatoid arthritis patients which were studied only 53 patients (39%) presented with ocular manifestations. (Table 1)

Table 1: Ocular manifestations and disease

Disease	Ocular manifestations	
RA patients	Present	Absent
135	53 (39%)	82 (60.70%)

Out of 53 patients 41 were females (78%) and 12 were males. (Table 2)

Table 2: RA Patients

RA patients	Males	Females
53	12 (22%)	41 (78%)

Out of 53 patients, 28 patients (53%) presented with dry eyes, 10 patients with scleritis and anterior uveitis. (19%). (Table 3)

Table 3: Manifestations in patients

Manifestations	Dry eyes	Scleritis	Epicleritis	Anterior uveitis	PUK+Keratitis	Vasculitis
Patients	28	10	3	10	1	1
Percentages	53%	19%	6%	19%	2%	1%

Manifestations were mostly bilateral 45 patients (85%) and unilateral in 8 patients (15%). (Table 4)

Table 4: Manifestations Unilateral, bilateral

Manifestations	Patients	Percentages
Unilateral	8	15%
Bilateral	45	85%

Discussion

The incidence of ocular lesions in our study was 39% which was in concert with the study performed by Reddy SC *et al* [7] and is much higher than that of [8,9]. Keratoconjunctivitis sicca is the most common ocular manifestation in rheumatoid arthritis which is comparable to the studies performed by [7]. The percentage of KCS in our study was 53% which showed similarity with study by Vignesh AP *et al* [10]. Anterior scleritis was diagnosed in all patients. The primary sign was redness. This redness was localized in one sector in one patient, involved the whole sclera in another patient, and was in the interpalpebral area in the third patient. Other symptoms of scleritis were pain, tearing or photophobia, and tenderness. On bio microscopy examination of the anterior segment in scleritis, maximum congestion was noticed in the deep

episcleral network with some congestion in the superficial episcleral network. The present study coincided with previous literature [11-14].

Conclusion

Rheumatoid arthritis besides causing articular manifestations, causes significant extra-articular involvement. Ocular manifestations involved with RA are keratoconjunctivitis sicca, episcleritis, scleritis, corneal changes and retinal vasculitis. These were present in 39% of the patients. Women were more affected and the disease manifestation was mostly bilateral. KCS was the commonest among all. These concomitant ocular manifestations are of utmost concern and must be addressed because of the high potential for permanent damage and blindness if they are allowed to run their course without intervention.

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