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Prevalence of Ocular Manifestations in Patients of Rheumatoid Arthritis

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ABSTRACT

To study the prevalence of ocular manifestations in patients of rheumatoid arthritis. **Material and Methods**: 104 Patients of rheumatoid arthritis were studied during five years period at AL-KHIDMAT teaching hospital Mansoora, Lahore. Ocular examination included best corrected visual acuity, slit lamp examination, tear film breakup time, Schirmer test, fluorescence staining and fundus examination. **Results:** Dry eye was the most common association encountered. It was present in 31 patients. Severe dry eye with Schirmers test value less than 5mm was observed in 10 patients. Moderate degree of dry eye was present in 21 patients. Scleritis was observed in two patients. Fluorescene staining revealed corneal ulcer in four patients. Temporary eye patches results in healing in three patients while one patient needed lateral tarsorraphy to get relief from ulcer. Cataract due to steroid intake was seen in four patients. Steroid induced glaucoma in two patients. Age range was between 23–74 years and mean age of 46 years. There were 13 males and 91 females. **Conclusion:** Dry eye was the most common finding in patients with rheumatoid arthritis mainly in females. Cataract and glaucoma are due to inappropriate use of steroids. Scleritis and scleromalacia perforans are very rare.

INTRODUCTION

Rheumatoid arthritis is a chronic systemic immunological disorder that can affect several systems of the body. It affects the small joints of fingers, wrists, and ankles or large joints of knees and shoulder. In the first stage called synovitis the damage is not severe. In the second stage synovium thickens and covers the cartilage. In third stage damage is severe as enzyme released from synovium digests the bone and cartilage. This causes deformities and loss of movement. Stage four rheumatoid arthritis is the end stage. The joints gradually become less functional and finally become immobile. Being a systemic disease manifestations are not limited to joints but cardiovascular system, serous membranes and respiratory systems are involved in various ways. A high percentage of rheumatoid arthritis patients show ophthalmic manifestations as well.[1-4] Common ophthalmic problems associated with rheumatoid arthritis include kerato conjunctivitis sicca. Episcleritis, scleritis and peripheral keratitis are rare.[5-7]. Scleral involvement may present as diffuse or nodular scleritis with or without inflammation. Necrotizing scleritis and scleromalacia perforans are rarely encountered.[8-10]

Dry eye is one of the most common problems encountered globally. Dry eyes and dry mouth are usually associated.[11] Two classes of dry eye are aquous deficient dry eye (ADDE) and evaporative. ADDE is associated with decreased lacrimal secretion and is subcategorized into Sjogren's syndrome (SS)-related dry eye and non Sjogren's syndrome dry eye. Two forms of SS are recognized, primary SS (pSS) consists of dry eye in combination with dry mouth, presence of certain autoantibodies and a positive minor salivary gland biopsy, and secondary Sjogren's syndrome(sSS) which has the presentation of both pSS and an autoimmune

connective tissue disease most commonly rheumatoid arthritis. Diabetes mellitus type II and thyroid associated diseases are frequently involved in dry eye syndrome.[12-14]

Dry eye disease is a common multifactorial disease of the lacrimal gland that results in tear film instability, hyperosmolarity, chronic irritation and inflammation of the ocular surface. Tear film instability, reduced tear film breakup time and damage of the exposed surface epithelium which can be stained with fluorescence or rose Bengal. Schirmer test value <5mm is diagnostic. New clinical tests such as lid wiper epitheliopathy (LWE) and lid parallel conjunctival folds (LIPCOF) has shown useful. Lid wiper epitheliopathy is alteration in the epithelium of the lid margin conjunctival epithelium of upper eyelid that wipes the ocular surface during blinking. Because of tear film deficiency lid wiper is subjected to trauma. Lipcoff are folds in the temporal and nasal lower quadrants of bulbar conjunctiva parallel to the lower lid margin.[15-16]

MATERIAL AND METHODS

The present study was planned to know the spectrum of ocular involvement in patients of rheumatoid arthritis. The patients attending the out-patient departments of AL-Khidmat teaching hospital Mansoora were referred to eye department. Patients were referred especially from orthopaedic and medical departments. Patients also came directly with different complaints in eye department and were found to have rheumatoid arthritis were also included in the study. Patients were diagnosed according to criteria laid down by American college of rheumatology (ACR).[17-20]. Detailed history about joints involved and investigations were noted. Detailed history of any eye problem was taken. Best corrected visual acuity was recorded. Slit lamp examination included tear film breakup time and fluorescence staining. Schirmer test was performed on every patient to know the amount of tear production.

RESULTS

This is a cross-sectional study done on 104 patients of rheumatoid arthritis over a period of four years at AL-Khidmat Teaching hospital Mansoora, Lahore. The most common finding in these patients were dry eye. It was found in 31 patients. Treatment was started in these patients. Eleven patients were already taking some treatment. Schirmer test value of <5mm were observed in 10patients and value of 5-10mm were observed in 21 patients. The value >10mm were present in the remaining patients. These patients were not suffering from dry eyes.

Tear film breakup time (BUT) were normal in 61 patients. Abnormal BUT of <10mm were present in 43 patients. Filamentry keratitis was observed in 15 patients. Corneal ulcers were present in four patients on fluorescence staining. These cases were treated by eye patch and antibiotic drops. Keratitis associated with scleritis was rare, seen only in two patients. If untreated it can cause perirheral corneal thinning resulting in ulcer formation and infection. Later on cicatrization lead to peripheral corneal opacities. Recurrent attacks of scleritis can cause diffuse scleral thinning along the whole circumference of globe.

Long term use of steroids in treating arthritis is responsible for ocular complications. Posterior subcapsular cataract was observed in 4 patients on steroid therapy. These patients were taking steroids from non registered practioners in rural areas. Two cases of steroid induced glaucoma were observed. Their intraocular pressure was controlled medically over a period of three to four months and thereafter they remain normotencive on follow-up.

Table 1:- Break up of ocular complications in rheumatoid arthritis patients (n = 104)

	No. of patient	% of cases
Dry eyes	31	29.8%
Filamentry Keratitis	15	14.4%
Corneal ulcers	4	3.8%
Peripheral Keratitis	2	1.9%
Scleritis	2	1.9%
Cataract	4	3.8%
Steroid induced glaucoma	4	1.9%

DISCUSSION

Rheumatoid arthritis is an autoimmune disorder that affects the small joints of fingers and wrists and large joints such as knees and ankles. Females are most commonly affected with a female to male ratio of 9:1.[21-18]. In our study there were 91 females as compared to 13 males. This is almost the same ratio as reported in other studies. Xerophthalmia is the most common finding often with associated dry mouth and difficulty in swallowing. It varies from very severe to moderate and mild degrees. Most severe form results in great disability especially in summer. Prevalence of dry eyes varies in different reports. It varies from 21.25% to 40.6% but most of the studies quote an incidence that falls near 25%.[22-17]. Dry eyes if treated appropriately and timely can help patients to live a nearly normal life. Counseling of the patients is important regarding the nature of the disease, how to avoid hot weather conditions and the frequency of instillation of eye drops accordingly. Most of the studies on kerato conjunctivitis sicca have reported an incidence of dry eye in rheumatoid arthritis between 21% to 30%. In our study the incidence of 29.8% is according to most of the reports in this regard. [24-28]

Lack of tears result in frequent corneal epithethial erosions, filamentary keratitis, ulcer formation and sometimes supportive keratitis. Illiterate peoples coming from rural areas are ignorant of the nature of disease. Inappropriate treatment and frequent rubbing of the eyes results in the formation of corneal ulcers. These cases were treated with patch and antibiotic drops along with artificial tears and the ulcers were healed in due course of time. Peripheral keratitis were seen in two cases .If untreated it can lead to peripheral corneal thinning. Punctate epitheliopathy and filamentary keratitis were seen in 15 patients.

Scleritis is a rare association. Two cases (1.9%) were observed in our study. It varies from mild to very severe. Recurrent attacks leads to extreme thinning of the sclera with uveal tissue showing through. Oral non steroidal anti-inflammatory agents along with topical steroids were given in these patients. The association of scleromalacia perforans with long-standing severe rheumatoid arthritis is well documented. It was not observed during the period of study. Incidence of scleritis and peripheral keratitis are also the same as in other studies reported.

Injudicious use of steroids in rheumatic patients results in cataract of posterior sub-capsular type and open angle glaucoma. Again these were the cases which were taking treatment from non-registered practioners and they first came to us with visual loss. A very high incidence of 3.8% of cataract and 1.9% of glaucoma reflects the magnitude of the problem our country is facing by allowing the quacks (non-registered) to practice.

CONCLUSION

Prevalence of ocular manifestations in rheumatoid arthritis patients in our population is the same as in other parts of the world. Almost all the studies reported dry eye as the most common finding. This high prevalence of dry eye suggests that Schirmers test should be performed regularly in patients of rheumatoid arthritis. Prevalence of steroid induced cataract and glaucoma in these patients emphasizes the need to prescribe steroids more judiciously.

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