

Ocular Manifestations in Psoriasis

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ABSTRACT

BACKGROUND

Psoriasis is a chronic inflammatory skin disease. Almost 10% of the psoriatic population is affected with one or the other ocular manifestation, which usually occurs much later than skin involvement, hence they often go unnoticed. We wanted to study the various clinical presentations of psoriasis in the eye and determine possible relationships between frequency of ocular involvement and patient's age, sex, duration of illness since diagnosis, type of psoriasis, severity of the disease and treatment received for the same.

METHODS

Complete ophthalmic examination was performed in 75 patients >18 years of age, diagnosed with psoriasis.

RESULTS

Among 75 cases of psoriasis examined, 74.67% had ocular manifestations. They were found to be more common in patients with PASI score of >10. No statistically significant relation between duration of disease and ocular manifestations of psoriasis was seen.

CONCLUSIONS

Ocular manifestations are a significant part of the psoriasis manifestations therefore routine eye examinations are recommended in psoriasis patients of all types, to screen for commonly associated ophthalmic conditions including blepharitis, dry eyes, cataract, conjunctivitis and uveitis during their regular follow-up visits with their dermatologist.

KEYWORDS

Psoriasis, Ocular Manifestation, PASI Score, Blepharitis, Dry Eye, Cataract, Conjunctivitis, Uveitis.

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BACKGROUND

Psoriasis is a chronic remittent and relapsing illness affecting the skin, nails and joints. It is affected by genetics and environment. The immunopathology of psoriasis is characterized by T-cell activation and increased cytokine activity. Psoriasis affects 1% to 3% of adult population and produces multiple extra cutaneous manifestations. Ocular findings occur in 10% of patients.¹ Bilateral involvement is common, and these complications occur much later after the skin involvement and usually noted during the disease exacerbation. The ocular manifestations of psoriasis are subtle which can almost affect any part of the eye, and these are easily overlooked without a dedicated ocular examination. There is a significant impact of disease severity on patient-reported psychosocial and physical quality of life, including loss of work productivity.² Surveys into the quality of life implications of psoriasis do not give much importance to ocular manifestations.³ Therefore, it is important to recognize the incidence and varied presentation of eye diseases in psoriasis patients, in order to make an early diagnosis and prevent ocular morbidity and given the scarcity of research on this topic, this study has been taken up to make an attempt at contributing to the same.

Blepharitis is found to be the most common ocular finding in psoriatic patients.⁴ When the skin around the eye is involved, it presents in the form of erythema, edema, and plaque formation which can lead to complications like trichiasis, madarosis, cicatricial ectropion and in severe cases can result in desquamation of eye lid skin, compromising with the person's vision. A chronic and nonspecific conjunctivitis may be noted in few cases which if left untreated can lead to dreaded complications like keratoconjunctivitis sicca and symblepharon formation. Nodular episcleritis and limbal lesions resembling phlyctenules can also be seen.⁵ Dry eye has been reported in up to 18.75% of patients with psoriasis,⁶ which can either be a complication of blepharitis and conjunctivitis or an independent finding. Corneal involvement may include punctate keratitis, epithelial thickening, recurrent erosions, vascularization, ulceration which can lead to scarring and opacification though primary corneal involvement is rare. Anterior uveitis is another psoriasis associated ocular manifestation. Acute psoriatic uveitis tends to be bilateral, prolonged and more severe than non-psoriatic cases. Presence of human leukocyte antigen (HLA)-B27 is seen in these cases. Uveitis has also been reported in psoriatic patients without arthritis. Psoriatic eye manifestations may precede articular changes.⁷

Various ocular complications could also result from the various treatment modalities used for psoriasis. Long term usage of systemic corticosteroid therapy has been known to cause posterior subcapsular cataract and similar lenticular complications are found with the use of PUVA therapy. Use of oral retinoids may cause blepharitis, blepharo conjunctivitis, dry eyes, photophobia, cataract, nyctalopia and optic neuritis.⁸⁻¹⁰

Objectives

1. To study the various clinical presentations of psoriasis in the eye
2. To assess the frequency of ocular manifestations in patients with psoriasis.
3. To investigate possible relationships between the frequency of ocular involvement and patient's age, sex, duration of illness, type of psoriasis and severity of the disease and treatment received for psoriasis.

METHODS

This was a hospital based cross – sectional, observational study conducted over a time period of one year. Prior approval from the local ethics committee was obtained for the study. The study group consisted of 75 patients of psoriasis who were diagnosed by a single investigator on clinical grounds and started on medications and were referred to the department of ophthalmology for evaluation. Patients more than 18 years of age diagnosed with psoriasis (by dermatologist) attending the dermatology and ophthalmology outpatient departments and who consented for the study were included. Patients with diabetes mellitus, renal disease, sarcoidosis, systemic lupus erythematosus, Behcet's disease, tumors, infection, ocular trauma or allergy, abnormal eyelid movement, or a history of ocular surgery; use of contact lenses; or if they were receiving treatment with retinoids, psoralen and ultraviolet A radiation (PUVA), or narrow-band ultraviolet B (UVB) radiation were excluded from the study.

Patient particulars like age, sex, address and occupation details of the patients were taken. They were evaluated for duration of disease, site of lesion, type of psoriasis, extent of skin involvement using the Psoriasis Area and Severity Index (PASI),¹¹ with scores equal to or greater than 10 considered to indicate moderate or severe disease and detailed history of treatment received currently or during the previous 5 years were documented.

Ocular evaluation included head posture, ocular position, extra ocular movements, best corrected visual acuity, anterior segment examination using slit lamp, applanation tonometry for measuring IOP, lacrimal sac syringing and detailed fundus examination. Dry eye evaluation was done using Schirmer's-1 test and Tear break up time (TBUT). The Schirmer's test less than 10 mm and TBUT below 10 sec were considered abnormal. Diagnosis of dry eye disorder was made based on DEWS classification. Specific ocular complaints and their duration were noted using questionnaire. Cataracts grading was done according to the LOCS 111 score.¹²⁻¹³

Data was analyzed using the Statistical Package for Social Science (SPSS) standard version 13.0. The t test, Chi square and Pearson correlation test were used for data analysis. P value of $p < 0.05$ was considered statistically significant.

RESULTS

A total of 75 patients of psoriasis were examined out of which 18 were females and 57 males. The mean age of the patients was 46.8 ± 11.65 years. Majority of the patients in the study were in the age group of 41- 60 years. Duration of psoriasis in our study population was 5.2 ± 2.4 years. Majority of the patients had disease duration of less than 5 years. No statistical significance between duration of disease and ocular manifestations of psoriasis was found (p value-0.19). 71% cases with PASI score less than 5, 72 % cases with PASI score 5-10 and 79% cases with a PASI score of more than 10 respectively showed ocular manifestations. A statistically significant (p-value is 0.009) correlation between severity of the disease and occurrence of ocular manifestations was seen. Among 75 cases of psoriasis 56 (74.67%) patients had ocular manifestations. 83% of the included females (15 out of 18) and 72% of the males (41 out of 57) had ocular manifestations.

Type of Psoriasis	No. of Patients	No. of Patients with Ocular Manifestations
Plaque	53	44
Guttate	11	6
Erythrodermic	2	2
Pustular	3	1
Psoriatic arthritis	6	3

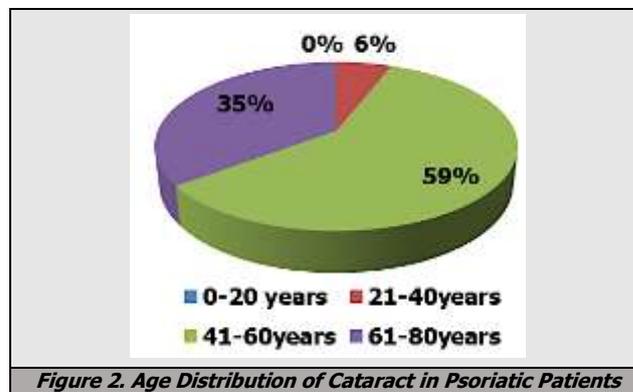
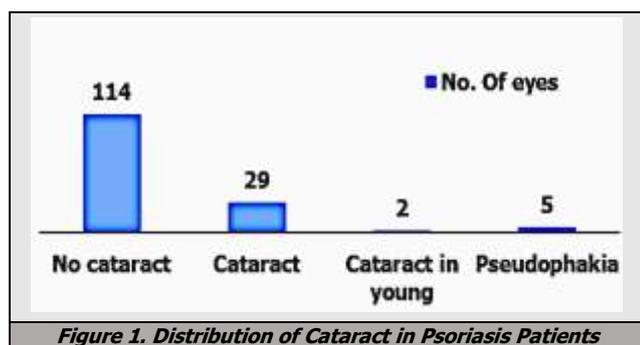
Table 1. Types of Psoriasis and Associated Ocular Manifestations

PASI Score	No. of Cases	Ocular Manifestations Present	Ocular Manifestations Absent
<5	7	5	2
5-10	39	28	11
>10	29	23	6

Table 2. Severity of Psoriasis and Ocular Manifestations

Ocular Manifestations	No. of Patients with Ocular Manifestation
Blepharitis	18 (24%)
Cataract/pseudophakia	17 (23%)
Dry eyes	13 (17%)
Chronic conjunctivitis	4 (5%)
Uveitis	3 (4%)
Chalazion	1 (1%)

Table 3. Prevalence of Ocular Manifestations



15 (29 eyes) of 75 psoriasis patients had cataract and 3 patients (5 eyes) had pseudophakia. Bilateral cataracts were found in 14 patients. One patient (2 eyes) was diagnosed to have presenile cataract (21-40 years) with early posterior subcapsular cataract in both eyes. Between the age groups 41-60 years, 10 patients (20 eyes) had cataract which included nuclear sclerosis (7 eyes) or posterior subcapsular type (3 eyes). Studies done previously have mentioned that PUVA (psoralen and ultraviolet A radiation) therapy and steroids are responsible for higher incidence of cataract in these patients. However, none of the studies suggested any direct correlation between the disease process and its therapy and development of cataract. 13 of 75 patients had dryness of eyes (Schirmer's test – 1 <10 mm or TBUT<10S), and a statistically significant (p-value-0.001) correlation between prevalence of dry eye and severity of psoriasis was noted. The mean Shimmers was 9 ± 4 mm and TBUT was 10 ± 1 sec in the psoriatic group.

PASI Score	No. of Psoriasis Patients	No. of Psoriasis Patients with Dry Eyes
<5	7	2
5-10	39	5
>10	29	6

Table 4. PASI Score and Prevalence of Dry Eyes

Type of Treatment	No. of Psoriasis Patients	No. of Psoriasis Cases with Ocular Manifestations
Methotrexate	55	43
Topical Steroids	11	6
PUVA	6	3
Topical tar	4	2
Acitretin	5	2

Table 5. Comparison between Treatment Received and Prevalence of Ocular Manifestations

DISCUSSION

Psoriasis is a chronic inflammatory disorder of the skin, nail and joints along with various extra cutaneous manifestations among which ocular involvement is important as they are most commonly missed during routine examination.

Studies done by Chandranet al³ and Erbagci et al¹⁴ have found the prevalence of ocular manifestations in psoriasis to be 67% and 65% respectively, which in our study was found to be 74.67%. Comparing with these previous studies our study population comprised of people from southern part of India and the number of patients studied varied which could explain the higher correlation found in our study. There was no significant relationship between ocular manifestations and the patient's gender, age, or duration of psoriasis which was similar to the results of the previous studies.¹⁵ It was found that as the severity of the disease increased so did the prevalence of ocular manifestations. Patients with PASI score of 10 and above were more prone. Though the patients did not present primarily with ocular symptoms but upon questioning the patients with severe psoriasis were found to be more symptomatic.

Erbagci et al¹⁴ showed 65% prevalence of blepharitis in psoriasis patients, whereas in our study it was found to be 24% (18 cases, 36 eyes). Anterior seborrhoeic blepharitis was most commonly seen. It was most common in patients with plaque psoriasis (34 eyes) followed by erythrodermic psoriasis (2 eyes). These patients presented with inflammation, itching, burning of the eyelid margin, foreign body sensation, red swollen eyelids and flakes/dandruff on eyelids. The etiopathogenesis being meibomian duct occlusion by psoriatic scale, as well as underlying lower tear film break-up time in these patients.¹⁶

Wanscheret al,¹⁷ in their study of 266 patients with mean age of 24.7 years, found that the incidence of cataract among psoriasis patients does not exceed the normal population. In our study, one patient (2 eyes) diagnosed with presenile cataract (21-40 years) had early posterior subcapsular cataract in both eyes. Between the age groups 41-60 years, 17 patients (34 eyes) had cataract either of nuclear sclerosis (30 eyes) or posterior subcapsular type (4 eyes). On the basis of age distribution of these cases maximum patients were less than 50 years of age and these patients were found to have more severe disease. Subsequently these patients had longer duration of the disease and longer exposure to drug therapy. Occurrence of cataract in the younger age group could have been a part of the disease process, effect of systemic therapy or it could have been an incidental finding. These patients had symptoms of gradual declining vision and glare around lights. Previous studies have mentioned PUVA (psoralen and ultraviolet A radiation) therapy and steroids could be responsible for higher incidence of cataracts in these patients. However, none of the studies suggested any direct correlation between the disease process and its therapy and development of cataract.^{3,14,18}

Lima et al¹⁹ in their study found abnormal Schirmer test in 50% of Psoriasis patients and 67% abnormality in TBUT. Kilic et al¹⁵ noted Schirmer test and TBUT values statistically lower in the patient group than those in the control group. In our study the prevalence rate was 17%. We detected Schirmer and TBUT values significantly lower in patients with psoriasis and this included patients with more severe form of psoriasis. The reason for low prevalence rate could be the

rigid diagnostic criteria used to classify dry eye (Schirmer I<10 or TBUT <10). Low Schirmer and TBUT values in psoriasis have been considered to be due to either meibomian gland dysfunction or the mechanical obstruction of meibomian glands or lacrimal duct as a result of increased cell turnover.^{14,20}

Conjunctival manifestations were seen in 4 (7 eyes) out of 75 patients had diffuse conjunctival injection. Kaldeck et al²¹ reported 11 cases of conjunctivitis out of 90 psoriasis patients whereas Ingram et al stated that the occurrence of conjunctivitis and psoriasis was coincidental. Chronic, non-specific conjunctivitis is the most common type of conjunctivitis observed in psoriasis. Most common symptoms in these patients were redness, tearing, or thick yellow discharge.

In our study 3 patients (6 eyes) were diagnosed with acute anterior uveitis. PASI score was more than 10 in all cases and they had a longer duration of the disease. The cases with bilateral uveitis had associated psoriatic arthritis. Few studies relate uveitis with psoriatic arthropathy^{5,22,23} while some studies have found it as an independent entity.³

In our study we were unable to establish if the occurrence of cataract in psoriasis patients is a result of the disease process or due to systemic medication and age played as a confounding factor in these cases. Patients of psoriasis on long duration of systemic drug therapy must be evaluated specifically to determine the effect of each modality of treatment used and the resultant effect on the eye. Therefore, there is scope for further research in this topic.

CONCLUSIONS

There is a higher prevalence of blepharitis, dry eye, and cataract in patients with psoriasis along with other occasional ocular manifestations. Therefore, these patients must undergo periodic eye examinations to monitor for ocular manifestations that might otherwise progress to visual impairment if left untreated. It must also be remembered that ocular manifestations in these patients may be independent of factors such as gender, PASI score, duration of disease, and nail and joint involvement. Including ocular screening in psoriasis management protocols could help achieve early diagnosis and improve outcomes. Dermatologists should regularly monitor their patients for eye symptoms. Likewise, ophthalmologists should enquire about history of psoriasis when evaluating ocular symptoms.

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