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Prevalence And Patterns Of Ocular Manifestations In Psoriasis: A Cross-Sectional Study

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ABSTRACT

Background: Psoriasis is a chronic inflammatory condition affecting the skin, nails, joints, and eyes. Ocular manifestations in psoriasis, such as dry eyes, blepharitis, conjunctivitis, and uveitis, are often overlooked despite their potential impact on quality of life. **Objective:** This study aimed to investigate the prevalence and types of ocular manifestations in psoriasis patients and their correlation with disease severity. **Methods:** This observational study was conducted at Government Medical College, Jammu, between March 2022 and March 2023. It included 50 psoriasis patients who underwent comprehensive ophthalmic evaluations, such as best-corrected visual acuity (BCVA), slit-lamp examination, tear film break-up time (TBUT), Schirmer test, and fundus examination. The Psoriasis Area and Severity Index (PASI) was calculated for each participant to assess disease severity. **Results:** The mean disease duration was 5.5 $\pm$ 3.8 years, and 62% of patients (n=31) exhibited ocular manifestations. Dry eyes were the most common finding (22%), followed by cataract/pseudophakia (14%), blepharitis (14%), chronic conjunctivitis (8%), and uveitis (4%). Patients with higher PASI scores were more likely to have ocular involvement. **Conclusion:** The study highlights that ocular manifestations are a significant complication of psoriasis, with dry eyes being the most prevalent. Routine ophthalmic evaluations are recommended for early detection and management of ocular conditions in psoriasis patients.

KEYWORDS: Chronic Inflammatory Condition, Eye, Skin Diseases, Schirmer Test, Jammu

INTRODUCTION

Psoriasis is a chronic inflammatory disease that affects 1% to 3% of the adult population worldwide, significantly impacting quality of life due to its systemic manifestations. [1] While psoriasis primarily affects the skin, it is increasingly recognized as a multisystem disease with extracutaneous complications, including ocular involvement, reported in approximately 10% of patients. [1] Psoriasis manifests in various morphological forms, including chronic plaque, guttate, pustular, and erythrodermic types, each of which may have differing systemic and ocular associations. [2]

Ocular manifestations of psoriasis can involve multiple structures, including the eyelids, conjunctiva, and cornea, and may present as conditions such as dry eye, blepharitis, conjunctivitis, and uveitis. [3] Uveitis, in particular, is more frequently associated with psoriatic arthritis and is a vision-threatening condition if left untreated. [4] Other ocular changes include ectropion, trichiasis, punctate keratitis, and, in severe cases, corneal melting, which are attributed to systemic inflammation and adverse effects of psoriasis treatments. [5, 6] Studies have noted that ocular manifestations in psoriasis patients typically follow the onset of cutaneous lesions, but these are often nonspecific, mild, or underdiagnosed. [6] Despite the potential for vision-threatening complications [7], ocular manifestations of psoriasis are often overlooked by both patients and clinicians. Early identification and management of these conditions are critical for preventing long-term sequelae. [8, 9] Dermatologists and general practitioners play a key role in recognizing early signs of ocular involvement and facilitating timely ophthalmologic evaluations. [10]

This study aims to investigate the prevalence and patterns of ocular manifestations in psoriasis patients and to explore their correlation with disease severity. By addressing these aspects, the study seeks to underscore the importance of interdisciplinary care in the management of psoriasis.

METHODOLOGY

This observational cross-sectional study was conducted in the Departments of Dermatology and Ophthalmology at Government Medical College, Jammu, from March 2022 to March 2023. The study was approved by the Institutional Ethical Committee, and informed consent was obtained from all participants. The study included 50 patients with a confirmed diagnosis of psoriasis.

Inclusion Criteria : Patients aged 18 years or older and Confirmed diagnosis of psoriasis based on clinical examination.

Exclusion Criteria : History of contact lens use, Presence of any other systemic disease affecting ocular health and/or History of ocular trauma.

Data Collection : The demographic data of patients, including age, gender, duration of psoriasis, and type of psoriasis, were recorded. Psoriasis severity was assessed using the Psoriasis Area and Severity Index (PASI), which evaluates the extent of skin involvement and the appearance of plaques.

Ophthalmic Evaluations : A comprehensive ophthalmic examination was performed for all participants, including the following:

Best-Corrected Visual Acuity (BCVA): To assess visual acuity

Slit-Lamp Examination: Conducted using a Zeiss slit lamp to evaluate anterior segment abnormalities

Intraocular Pressure (IOP): Measured to screen for glaucoma or other pressure-related abnormalities

Tear Film Break-Up Time (TBUT): Assessed to evaluate tear film stability

Schirmer Test: Performed to measure tear production, with results categorized as: <5 mm: Severe dry eye, 5-10 mm: Moderate dry eye, and 10-15 mm: Mild dry eye.

Fundus Examination: Conducted using an indirect ophthalmoscope to assess posterior segment abnormalities

Statistical Analysis :

Data were analyzed to explore the prevalence of ocular manifestations and their association with demographic and clinical variables, such as duration of disease and PASI scores. Statistical significance was evaluated using appropriate tests, including Chi-Square and Cochran-Armitage trend tests, with a p-value of <0.05 considered statistically significant.

RESULTS

Patient Demographics

A total of 50 patients were enrolled in the study. The mean age of the patients was 44.05 years, ranging from 18 to 72 years. The majority of patients (42%) were in the age group of 41-60 years. Out of the 50 patients, 28 were males and 22 were females. Among males, 19 (67%) exhibited ocular manifestations, while 12 females (54.5%) showed similar findings.

Patient Demographics	With Ocular Manifestations*	Without Ocular Manifestations*	Total
Gender (male)	19	9	28
Age Group (Years)			
18-20	2	2	4
20-40	9	7	16
40-60	15	6	21
60-80	5	4	9
Total	31	19	50

*in numbers

Table 1: Age and Gender Distribution of Patients with and without Ocular Manifestations

Disease Duration and Ocular Manifestations

Most patients with ocular manifestations had a disease duration of less than five years. The mean disease duration was 5.5 $\pm$ 3.8 years. Out of 36 patients with a disease duration of less than five years, 23 (63.8%) had ocular involvement. For patients with disease durations of 6-10 years and more than 10 years, 6 (60%) and 2 (50%) had ocular manifestations, respectively.There is no significant trend in the proportion of ocular manifestations across the ordered groups of disease duration.

Duration of Disease (Years)	Total	With Ocular Manifestations
< 5	36	23
6-10	10	6
> 10	4	2
Total	50	31

χ2: 0.3, p-value: 0.85

Table 2: Distribution of Ocular Manifestations by Disease Duration of Psoriasis

PASI Scores and Ocular Manifestations

Patients with higher Psoriasis Area and Severity Index (PASI) scores were more likely to have ocular manifestations. The maximum number of patients with ocular manifestations (16) had PASI scores between 5 and 10. Additionally,

13 patients with ocular involvement had PASI scores greater than 10. Only two patients with PASI scores less than five exhibited ocular findings.The Chi-Square Test for Trend result showed no significant trend in the proportion of ocular manifestations across the PASI score categories

PASI Score	With Ocular Manifestations (n)	Without Ocular Manifestations (n)	Total
< 5	2	2	4
5-10	16	9	25
> 10	13	8	21
Total	31	19	50

χ2: 0.287, p-value: 0.87

Table 3: Distribution of Ocular Manifestations by PASI Scores

Prevalence of Ocular Manifestations

Out of 50 patients with psoriasis, 31 (62%) had ocular manifestations. The most common ocular finding was dry eyes, observed in 11 patients (22%). This was followed by cataract/pseudophakia and blepharitis, each affecting seven patients (14%). Chronic conjunctivitis was noted in four patients (8%), and uveitis was identified in two patients (4%).

Ocular Manifestation	No. of Patients	Percent
Dry Eyes	11	22
Cataract/Pseudophakia	7	14
Blepharitis	7	14
Chronic Conjunctivitis	4	8
Uveitis	2	4
Total	31	62

Table 4: Prevalence and Types of Ocular Manifestations in Psoriasis Patients

Ophthalmic Evaluations:

- **Tear Film Break-Up Time (TBUT):** Among 11 patients with dry eyes, TBUT was less than 10 seconds.
- **Schirmer Test:**Of the 11 patients with dry eyes, 3 had Schirmer scores less than 5 mm, 5 had scores between 5-10 mm, and 3 had scores between 10-15 mm.
- **Fundus Examination:** No fundus abnormalities were observed during indirect ophthalmoscopy.

DISCUSSION

This study highlights the significant prevalence and variety of ocular manifestations in patients with psoriasis. The mean age of patients in our study was 44.05 years, with most patients falling within the 41–60 age group. These findings align with the age distribution reported by Her et al. [11], who observed similar age patterns in their study population. The male predominance observed in our study (67%) is also consistent with the findings of Kharolia et al. [12], who documented a higher prevalence of psoriasis with ocular involvement among males. Conversely, Yang et al. [13] reported a lower mean age of 29 years, which reflects variations in study demographics, geographic factors, and population characteristics.

Chandran et al. [14] and Erbagci et. al. [15] found that the prevalence of ocular manifestation in psoriasis was 67% and 65% in their respective studies which is in accordance with our study.

This study shows that ocular manifestations are common in patients with psoriasis, with a prevalence of 62%. Dry eyes were the most frequently observed condition (22%), similar to the findings by Erbagci et al. [15] who reported tear film instability as a common problem in psoriasis. The reduced tear film break-up time (TBUT) and low Schirmer scores in our patients highlight the need for regular screening for dry eye, which can significantly affect quality of life.

Blepharitis and chronic conjunctivitis were seen in 14% and 8% of patients, respectively. These findings are consistent with the results of Kilic et al. [16], who also identified anterior segment inflammation in psoriasis patients. Chronic inflammation in the eyelids and conjunctiva can lead to discomfort and vision problems, emphasizing the importance of early detection and treatment. Uveitis, although less common (4%), is a serious complication that can threaten vision. Studies by Lee et al. [4] and Yang et al. [13] also reported uveitis as a significant ocular manifestation in psoriasis patients. While the prevalence of uveitis in our study was lower, it may reflect differences in disease severity or patient characteristics. Early diagnosis and management of uveitis are essential to prevent complications.

Cataract and pseudophakia were observed in 14% of patients. This is likely linked to prolonged corticosteroid use, a known treatment for moderate to severe psoriasis. Aryanian et al. [10] also reported an increased risk of corticosteroid-related ocular issues in psoriasis patients. This highlights the need to minimize corticosteroid use and explore alternative treatment options when possible.

Patients with higher PASI scores were more likely to have ocular manifestations, suggesting a connection between disease severity and systemic inflammation. Similar observations were made by Aditya Maitray et al. [5], who found a higher risk of ocular involvement in patients with severe psoriasis. However, the lack of a significant trend in our data requires further study with larger samples.

The findings of this study underline the importance of regular ophthalmic evaluations in psoriasis patients. Screening tools like the Ocular Manifestations in Psoriasis

Screening (OcMaPS) questionnaire, developed by Ruggiero et al. [6], can help identify ocular issues early, even in patients without obvious symptoms.

This study has some limitations. The small sample size and cross-sectional design may not fully capture the range of ocular involvement in psoriasis. Larger, long-term studies are needed to better understand the progression of ocular conditions in these patients and their response to treatment.

CONCLUSION

This study demonstrates that ocular manifestations are a common comorbidity in patients with psoriasis, with dry eyes being the most prevalent finding. Routine ophthalmologic evaluations are crucial, particularly for patients with severe psoriasis or longer disease duration, to enable early detection and timely management of ocular complications. Interdisciplinary collaboration between dermatologists and ophthalmologists is essential to provide comprehensive care and improve patient outcomes. Further research involving larger cohorts and longitudinal studies is recommended to enhance the understanding of the relationship between psoriasis and ocular involvement and to guide effective management strategies.

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