International Journal Dental and Medical Sciences Research
Volume 5, Issue 5, Sep-Oct 2023 pp 32-35www.ijdmsrjournal.com ISSN: 2582-6018

A study of the different ocular manifestations of Psoriasis in a tertiary hospital in Kolkata

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Date of Submission: 01-09-2023 Date of Acceptance: 11-09-2023

ABSTRACT
Title: A study of the different ocular manifestations of Psoriasis in a tertiary hospital in Kolkata
Purpose: To find out the different ocular manifestations in Psoriasis patients
Methods: An observational cross-sectional study where 68 patients (136 eyes) diagnosed with psoriasis between 18-65 years were examined for any ocular changes. Dry eye questionnaire OSDI, anterior segment examination, T-BUT Fluorescein test and Schirmer test were carried out. They were compared with age matched healthy volunteers.
Results : Out of 68 psoriasis patients (136 eyes), 58 eyes 42.64%showed ocular changes (p0.3) - 50 eyes (36.7%)showed conjunctival hyperemia, 18 eyes (13.3%) showed blepharitis, 4 eyes (2.9 %) showed corneal opacities, 2 eyes(1.4%) showed cataractous changes, 2 eyes (1.47%) had madarosis and 4 eyes had diabetic retinopathy (p 0.017). T-BUT Fluorescein test and Schirmer I test was9.5 ± 3.1 seconds and9.2 ± 2.9 mm (p 0.01)in psoriasis patients; 12.6 ± 2.4 seconds and 13.9 ± 1.2 mm in healthy volunteers respectively(p 0.01).
Conclusion: Routine ocular evaluation can be recommended in Psoriasis patients which will help in early diagnosis and timely management and thus improve outcome.
Key words: Psoriasis, Dry eye disease, Blepharitis

I. INTRODUCTION

Psoriasis is a systemic autoimmune disease commonly affecting the skin, nails and joints[1]along with cardiovascular, metabolic and psychiatric problems. [3]

The worldwide prevalence of psoriasis is estimated to be approximately 2–3% and in India it varies from 0.44% to 2.8%[2]

Psoriasis is driven by systemic inflammation. Inflammatory molecules released in the body can potentially affect various organs, including the eyes. The eyes are sensitive structures, and inflammation can lead to various ocular symptoms and conditions.[3]

Among these group of patients, ocular manifestations such as conjunctival hyperemia, dry eye and blepharitis are commonly seen.[1]

Some of the medications used to treat psoriasis can have effects on the eyes. Methotrexate and acetretin can cause dry eye and irritation. Biologics causes a weakened immune response leading to eye infections,[3] patients under phototherapy develop corneal opacity [5].

There are only a few literature on the ocular manifestations in psoriasis[1].However in West Bengal population, it is sparse.

Therefore this study was initiated to learn more about the various ocular signs in diagnosed cases of Psoriasis.

II. MATERIALS AND METHODS

(i) Study type and design: An observational cross-sectional study to examine and study the ocular changes in psoriasis patients. Each subject will sign a consent form before being enrolled in the study and prior to any measurements being taken.
(ii) Study setting: The study is conducted in the Department of Ophthalmology, College of Medicine and Sagore Dutta Hospital, Kolkata, West Bengal.
(iii) Study population: Study population includes age group from 18 years and above reporting to the department of Ophthalmology.

Inclusion Criteria: All adults from 18 and abovediagnosed with psoriasis who are willing to participate in the study. And age matched healthy subjects for control group.
Exclusion Criteria: (i) Unwilling volunteers (ii) Any known dermatological or systemic disorder except for psoriasis (iii) those with family history of ocular disease or ocular trauma

(iv) Sample size: Two psoriasis patientwere examined each week in the opd by simple random sampling. 136 eyes of 68 patients diagnosed with psoriasis and 122 eyes of 61 healthy volunteers were examined.
(v) Study duration: 1st May 2022 – 30th May2023
(vi) Tools and techniques:
(i) Visual acuity using a Snellen chart
(ii) Anterior Segment Examination with Slit Lamp Bio-microscopy
(iii) OSDI questionnaire
(iv) Schirmer's strip for Schirmer test
(v) Fluorescein strip for Fluorescein T-BUT test

International Journal Dental and Medical Sciences Research
Volume 5, Issue 5, Sep-Oct 2023 pp 32-35www.ijdmsrjournal.com ISSN: 2582-6018

(vi) Dialated fundocscopy for fundus evaluation

(vii) Plan for data management and analysis: Data was entered in MS excel spreadsheet and checked for consistency. Clean Data was imported into a statistical software (jamovi v2.2.5) for analysis. Quantitative data was expressed in Mean (±SD). Difference in means was tested by independent 2 sample. The results were statistically analysed by Man Whitney U test. A p value of <0.05 was considered as significant.

III. RESULTS

Gender	Psoriasis	Percentage
Male	37	54.4%
Female	31	45.58%

The mean age was 38 ± 12.094

Age (in years)	No of patients	Percentage
18– 28	7	10.29%
29- 38	19	27.9%
39-48	28	41.17%
49-58	11	16.17%
59 and above	3	4.41%

Ocular signs in Psoriasis	No of eyes	Percentage	P value
Yes	58	42.64%	0.03
No	78	57.35%	
	Total - 136		

Test for Dry eye	Mean ± SD		P value
	Psoriasis patients	Healthy volunteers	
Schirmer's Test I (mm)	9.2 ± 2.9	13.9 ± 1.2	0.01
Fluorescein T-BUT (seconds)	9.5 ± 3.1	12.6 ± 2.4	0.01

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OSDI questionnaire grading		Psoriasis	Percentage	Healthy volunteers	Percentage
Normal	0-12	15	22%	55	90.2%
Mild	13-22	49	72%	6	9.8%
Moderate	23-32	3	4.5%		
Severe	33-100	1	1.5%		

Ocular signs	Psoriasis patients (no of eyes)	Percentage	Healthy volunteers (no. of eyes)	Percentage	P value
Conjunctival hyperemia	50	36.7%			0.017
Blepharitis	18	13.3%			
Corneal opacities	4	2.9%	2	1.63%	
Cataract	2	1.4%	2	1.63%	
Madarosis	2	1.47%			
Diabetic Retinopathy	4	2.9%	6	4.9%	

IV. DISCUSSION

All the patients in the study as well as healthy volunteers were given Ocular Surface Disease Index (OSDI) questionnaire for filling up. They were assisted by the medical staff in case of difficultly[4]Best-corrected visual acuity (BCVA) was charted using Snellen's chart.

Slit lamp examination followed by Schirmer I test was conducted using Schirmer tear test strips, and the score at 5 min on the Schirmer test strip was noted.[4] Tear film breakup time (TBUT) was evaluated using fluorescein strip. The time beteeen the last blink and the first appearance of dry spot was recorded using a cobalt blue filter.

The study showed that Psoriasis has a preponderance for the male gender which was similar to the study done by Kharolia A et.al[4]

Most of the patients are in their late thirties. Khariolia A et al also found most of their patients in their fourth decade.[4]

Chandan et al and Erbagi et al [1] found that 67% and 67.4% of psoriasis patients had ocular manifestations respectively while 42.64% of Psoriasis patients in our study showed ocular changes.

Psoriasis can lead to dry eye disease Aryanian Z et al[3]OSDI score was higher in the study group. Impaired Fluorescein T-BUT test and Schirmer I test values were more in psoriasis compared to controls, also similar to Erbagci et al [5].

Conjunctival hyperemia and blepharitis were the two most common findings. Similar to Khariolia et al. [4], Balamurugan MS et al [1], Erbagci et al [5].

Blepharoconjunctivitis is due to increased incidence of mebomian gland dysfunction. Non-specific corneal opacities may be due to phototherapy used for psoriasis treatment. Catsarou-Catsari mentioned a Koebner response which is the development of lesions on previously normal skin after trauma in psoriatic lesions,

therefore microtraumas in the cornea are possible leading to corneal opacities (i.e,Koebner ephenomenon).[5]

Cataract foundmay be due to age related cataract or following long term steroid therapy. No significant association was found between cataract and psoriasis similar to Khariolia et al [4]

Some studies Abbagani et.al, Aragona et.al [4]and et al Balamurugan MS[1]reported uveitis in psoriasis patients, however this study did not find uveitis.

Limitations of my study are less sample size & short study duration. The severity of psoriasis was not graded into mild and moderate-to-severe disease and some patients were already on treatment while some were examined before the beginning of treatment.

V. CONCLUSION

We can conclude that routine ocular evaluation can be recommended in Psoriasis patients which will help in early diagnosis and timely management and thus improve outcome.

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