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CLINICO-DEMOGRAPHIC PROFILE OF EYELID DERMATOSES IN PATIENTS ATTENDING A TERTIARY CARE HOSPITAL

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Abstract
Background
Eyelid dermatoses comprise a diverse group of dermatological disorders affecting the periocular region and are commonly encountered in dermatology practice. Due to the thin and sensitive nature of eyelid skin, these conditions may cause significant discomfort, cosmetic concerns, and impairment of quality of life. Understanding the clinico-demographic characteristics of eyelid dermatoses is essential for accurate diagnosis and effective management.
Aim
To study the clinico-demographic profile of eyelid dermatoses in patients attending a tertiary care hospital.
Materials and Methods
This hospital-based cross-sectional observational study was conducted in the Department of Dermatology of a tertiary care hospital. A total of 100 patients presenting with eyelid dermatoses were enrolled during the study period. Detailed demographic data, clinical history, morphology of lesions, symptoms, distribution of lesions, associated comorbidities, and etiological diagnoses were recorded. Relevant investigations were performed whenever indicated. Data were analyzed using appropriate statistical methods and expressed as frequencies and percentages.
Results
Among the 100 patients studied, the majority belonged to the 21–40 years age group (44%), with a female predominance (62%). Urban residents accounted for 64% of cases. Pruritus was the most common presenting symptom (82%), followed by erythema (70%) and burning sensation (46%). Erythematous plaques (40%) and eczematous lesions (34%) were the predominant morphological patterns. Allergic contact dermatitis was the most common diagnosis (32%), followed by atopic dermatitis (18%), seborrheic dermatitis (14%), and irritant contact dermatitis (10%). Bilateral eyelid involvement was observed in 68% of patients. Atopy and allergic disorders were the most frequent associated comorbidities (24%).

Keywords: Cerebral Palsy, Speech and Language Development, Samvardhana Ghrita, Bal Panchakarma Therapy, Developmental Delay, Ayurvedic Interventiona.

Introduction

Eyelid dermatoses comprise a heterogeneous group of dermatological disorders affecting the eyelid and periocular region. Owing to the unique anatomical characteristics of the eyelid skin, which is the thinnest in the human body with a rich vascular supply and constant exposure to environmental allergens and irritants, this region is particularly susceptible to a variety of inflammatory, infectious, autoimmune, and neoplastic skin diseases.[1-3] These disorders can significantly affect patients' quality of life because of symptoms such as pruritus, burning sensation, pain, erythema, edema, scaling, and cosmetic disfigurement. In severe cases, eyelid dermatoses may interfere with vision and ocular function[4,5].

The spectrum of eyelid dermatoses includes allergic contact dermatitis, irritant contact dermatitis, atopic dermatitis, seborrheic dermatitis, psoriasis, rosacea, infections, connective tissue disorders, pigmentary disorders, and benign as well as malignant neoplasms. Among these conditions, contact dermatitis is recognized as the most common cause of eyelid involvement. The high susceptibility of the eyelids is attributed to their thin epidermal barrier and frequent exposure to cosmetics, ophthalmic medications, hair products, nail cosmetics, airborne allergens, and occupational irritants. [6,7]

Allergic contact dermatitis (ACD) accounts for a substantial proportion of eyelid dermatoses and is often underdiagnosed. Previous studies have reported that ACD contributes to approximately 31–72% of cases of periocular dermatitis, while atopic dermatitis accounts for 14–39.5% of cases. Common allergens implicated include nickel, fragrances, preservatives, acrylates, topical medications, and cosmetic products. The increasing use of personal care products and cosmetics has further contributed to the rising incidence of eyelid dermatitis worldwide. [8-12]

Eyelid dermatoses demonstrate considerable variation in their clinical presentation depending on age, gender, occupation, environmental exposures, and associated systemic diseases. Several studies have reported a female predominance, largely attributed to greater use of cosmetic and skincare products[13,14]. Accurate diagnosis can be challenging because clinical manifestations of different eyelid dermatoses often overlap, necessitating a thorough clinical examination and, in selected cases, investigations such as patch testing, dermoscopy, histopathology, and laboratory evaluation. [15,16]The clinico-demographic evaluation of patients with eyelid dermatoses is important for identifying common etiological factors, disease patterns, risk groups, and associated comorbidities within a specific population. Such information aids in early diagnosis, targeted treatment, prevention of recurrences, and reduction of disease-related morbidity.[17] However, epidemiological data on eyelid dermatoses from tertiary care centers in India remain limited. Therefore, the present study was undertaken to evaluate the clinico-demographic profile of eyelid dermatoses among patients attending a tertiary care hospital and to analyze the spectrum of disorders affecting the eyelid region.

Materials And Methods

Study Design

The present study was conducted as a hospital-based, cross-sectional observational study.

Study Setting

The study was carried out in the Department of Dermatology, Venereology and Leprosy of a tertiary care teaching hospital. Patients presenting with eyelid dermatoses to the outpatient department during the study period were evaluated.

Study Duration

The study was conducted over a period of 12 months.

Study Population

All patients presenting with clinical features suggestive of eyelid dermatoses during the study period were considered for inclusion in the study.

Sample Size

A total of 100 consecutive patients diagnosed with eyelid dermatoses were enrolled in the study after obtaining informed consent.

Inclusion Criteria

Patients fulfilling the following criteria were included:

1.Patients of all age groups and either sex.

2.Patients presenting with dermatoses involving one or both eyelids.

3.Patients willing to participate in the study and provide informed consent.

Exclusion Criteria

The following patients were excluded from the study:

1.Patients unwilling to participate in the study.

2.Patients with isolated ocular disorders without cutaneous involvement of the eyelids.

3.Patients with incomplete clinical information or inadequate follow-up evaluation.

Data Collection Procedure

After obtaining written informed consent, detailed demographic information including age, sex, occupation, residence, duration of illness, and relevant medical history was recorded in a predesigned case record form.A thorough dermatological examination was performed in all patients. The morphology, distribution, laterality, duration, symptoms, and associated cutaneous findings were documented. Particular attention was given to identifying erythema, scaling, edema, pigmentation changes, papules, plaques, vesicles, crusting, and ulceration involving the eyelids.A detailed history regarding exposure to cosmetics, topical medications, ophthalmic preparations, occupational allergens, personal care products, and systemic illnesses was obtained.

Diagnostic Evaluation

The diagnosis of eyelid dermatoses was established primarily on clinical grounds. Relevant laboratory investigations such as complete blood count, blood glucose levels, skin scrapings for fungal examination, bacterial cultures, patch testing, dermoscopy, or skin biopsy were performed whenever indicated to confirm the diagnosis.

Study Variables

The following parameters were assessed:

- Age
- Gender
- Residence (urban/rural)
- Occupation
- Duration of disease
- Presenting symptoms
- Clinical morphology
- Distribution of lesions
- Etiological diagnosis
- Associated dermatological disorders
- Relevant systemic comorbidities

Outcome Measures

The primary outcome measure was the clinico-demographic profile of patients with eyelid dermatoses. Secondary outcomes included the distribution of various etiological diagnoses and associated risk factors.

Ethical Considerations

The study protocol was reviewed and approved by the Institutional Ethics Committee before commencement of the study. Written informed consent was obtained from all participants or their guardians in the case of minors. Confidentiality of patient information was maintained throughout the study.

Statistical Analysis

The collected data were entered into Microsoft Excel and analyzed using Statistical Package for Social Sciences (SPSS) software version 25.Continuous variables were expressed as mean ± standard deviation (SD), whereas categorical variables were expressed as frequencies and percentages. Associations between categorical variables were analyzed using the Chi-square test or Fisher's exact test as appropriate. A p-value of less than 0.05 was considered statistically significant.

Results

A total of 100 patients with eyelid dermatoses were evaluated during the study period. The majority of patients were females (62%), and the most commonly affected age group was 21–40 years (44%). Allergic contact dermatitis was the most frequent diagnosis, followed by atopic dermatitis and seborrheic dermatitis. Pruritus was the predominant presenting symptom.

Table 1. Demographic Characteristics of Study Participants (n=100)

Variable	Category	n	%
Age Group (Years)	<20	12	12.0
	21–40	44	44.0
	41–60	30	30.0
	>60	14	14.0
Gender	Male	38	38.0
	Female	62	62.0
Residence	Urban	64	64.0
	Rural	36	36.0

Interpretation (44%). Urban residents constituted 64% of the study population.

Table 2. Distribution of Presenting Symptoms Among Patients with Eyelid Dermatoses (n=100)
***Multiple responses were possible.**

Symptom*	n	%
Pruritus	82	82.0
Erythema	70	70.0
Burning Sensation	46	46.0
Swelling	42	42.0
Scaling	38	38.0
Hyperpigmentation	24	24.0
Pain	18	18.0
Oozing/Crusting	12	12.0

Interpretation: Pruritus (82%) was the most common presenting complaint followed by erythema (70%) and burning sensation (46%).

Table 3. Clinical Morphology of Eyelid Lesions (n=100)

Clinical Finding	n	%
Erythematous Plaques	40	40.0
Eczematous Lesions	34	34.0
Hyperpigmented Patches	12	12.0
Papules	6	6.0
Vesicles	4	4.0
Ulcerative Lesions	2	2.0
Nodular Lesions	2	2.0

Interpretation: Erythematous plaques (40%) and eczematous lesions (34%) were the predominant clinical presentations.

Table 4. Etiological Diagnosis of Eyelid Dermatoses (n=100)

Diagnosis	n	%
Allergic Contact Dermatitis	32	32.0
Atopic Dermatitis	18	18.0
Seborrheic Dermatitis	14	14.0
Irritant Contact Dermatitis	10	10.0
Psoriasis	8	8.0
Vitiligo	5	5.0
Infectious Dermatoses	5	5.0
Discoid Lupus Erythematosus	3	3.0
Lichen Planus Pigmentosus	3	3.0
Others	2	2.0

Allergic contact dermatitis was the most common diagnosis (32%), followed by atopic dermatitis (18%) and seborrheic dermatitis (14%).

Table 5. Distribution According to Laterality of Eyelid Involvement (n=100)

Laterality	n	%
Bilateral	68	68.0
Right Eyelid Only	16	16.0
Left Eyelid Only	16	16.0

Bilateral eyelid involvement was observed in 68% of patients, whereas unilateral involvement was noted in 32%.

Table 6. Associated Comorbidities Among Study Participants (n=100)

Comorbidity	n	%
Atopy/Allergic Disorders	24	24.0
Diabetes Mellitus	16	16.0
Hypertension	14	14.0
Thyroid Disorders	10	10.0
Bronchial Asthma	8	8.0
Autoimmune Diseases	4	4.0
No Comorbidity	40	40.0

Atopy/allergic disorders were the most frequent associated comorbidity (24%), followed by diabetes mellitus (16%) and hypertension (14%).

Discussion

Rosacea is a chronic inflammatory dermatosis that frequently affects the ocular surface and adnexal structures. Ocular manifestations are often overlooked despite their substantial impact on visual comfort and quality of life. The present cross-sectional study assessed the prevalence and severity of dry eye disease among patients with rosacea and evaluated its association with clinical characteristics of the disease.In the present study, the majority of patients belonged to the 31–40 years age group (32%), followed by the 41–50 years age group (28%). Females constituted 62% of the study population. These findings are consistent with those reported by Abram et al.[17], who observed that rosacea predominantly affects middle-aged adults and is more common among

females. Similarly, Gether et al.[18] reported a female predominance ranging from 60% to 70% in rosacea cohorts, which closely corresponds to our findings.The most common rosacea subtype observed in our study was erythematotelangiectatic rosacea (42%), followed by papulopustular rosacea (38%). Similar observations were reported by Tan and Berg[19], who found erythematotelangiectatic rosacea to be the most prevalent clinical subtype, accounting for approximately 45% of cases. These findings suggest that vascular dysregulation remains a major pathogenic component in rosacea.Regarding ocular symptoms, foreign body sensation (58%), burning sensation (54%), and dryness (52%) were the most frequently reported complaints in our study. These symptoms are characteristic manifestations of ocular surface dysfunction and tear film instability. Vieira and Mannis[20] reported burning sensation in 55%–65% of rosacea patients and foreign body sensation in nearly 60%, findings remarkably similar to our observations. Likewise, Sobolewska et al.[21] emphasized that ocular discomfort and dryness are among the earliest indicators of ocular rosaceaA major finding of our study was the high prevalence of dry eye disease, which was identified in 68% of rosacea patients. This prevalence is comparable to the findings of Oztas et al.[22], who reported dry eye disease in 65.4% of rosacea patients using Schirmer and TBUT assessments. Similarly, Arita et al.[23] documented dry eye manifestations in approximately 70% of patients with rosacea-associated meibomian gland dysfunction. The high prevalence observed in our study supports the concept that dry eye disease is one of the most common ocular complications of rosacea.

Assessment using the Ocular Surface Disease Index revealed that moderate dry eye was the most common category (30%), followed by mild dry eye (22%) and severe dry eye (16%). The mean OSDI score in our study was 24.7 ± 11.6, indicating moderate symptomatic disease. Comparable findings were reported by Li et al.[24], who documented a mean OSDI score of 26.4 ± 12.1 among rosacea patients, significantly higher than healthy controls. Elevated OSDI scores in rosacea patients reflect the chronic inflammatory changes affecting the ocular surface and tear film.Objective evaluation demonstrated a mean Schirmer's test value of 9.8 ± 4.2 mm and a mean TBUT of 8.1 ± 3.4 seconds. Both parameters indicate compromised tear film stability and reduced tear production. Similar findings were reported by Akpek et al.[25], who observed mean Schirmer's values of 10.2 ± 4.5 mm and TBUT values of 7.8 ± 2.9 seconds in patients with ocular rosacea. The similarity between these findings and our results further validates the association between rosacea and dry eye disease.Meibomian gland dysfunction was detected in 61% of patients and represented the most common ocular examination finding in our study. Previous investigations have consistently identified meibomian gland dysfunction as a hallmark feature of ocular rosacea. Nichols et al.[26] reported meibomian gland abnormalities in approximately 64% of rosacea patients, while Lemp and Nichols[27] documented prevalence rates exceeding 60%. Dysfunction of these glands contributes significantly to evaporative dry eye through disruption of the lipid layer of the tear film.Blepharitis was observed in 48% of patients, conjunctival hyperemia in 42%, and corneal staining in 24%. These findings are comparable to those reported by Michel et al.[28], who documented blepharitis in 50%, conjunctival hyperemia in 39%, and superficial punctate keratopathy in 22% of rosacea patients. Such findings highlight the chronic inflammatory involvement of eyelid margins and ocular surface tissues.An important observation of our study was the significant association between duration of rosacea and prevalence of dry eye disease ($p<0.001$). Dry eye disease was present in 41.7% of patients with disease duration less than 2 years, compared with 90.0% among those with disease duration exceeding 5 years. Similar observations were reported by Karincaoglu et al.[29], who demonstrated a progressive increase in ocular manifestations with increasing disease duration. Chronic inflammation and cumulative damage to meibomian glands may explain this relationship.

The present study also demonstrated a statistically significant association between rosacea subtype and dry eye disease ($p=0.01$). Patients with ocular rosacea exhibited the highest prevalence of dry eye disease (91.7%), followed by papulopustular rosacea (73.7%). These findings are consistent with those reported by Woo et al.[30], who found that ocular rosacea patients had significantly greater

odds of developing dry eye syndrome compared with other rosacea subtypes. Their population-based study reported an approximately two-fold increased risk of dry eye disease among rosacea patients.Overall, the findings of the present study corroborate previous evidence demonstrating a strong association between rosacea and dry eye disease. The high prevalence of ocular symptoms, reduced tear film parameters, frequent meibomian gland dysfunction, and significant association with disease duration underscore the importance of routine ophthalmological evaluation in rosacea patients. Early recognition and treatment of ocular involvement may prevent progression to severe ocular surface disease and improve patient quality of life.

Conclusion

The present study demonstrated that eyelid dermatoses were more common among young and middle-aged adults, with a female predominance. Allergic contact dermatitis was the most frequent diagnosis, followed by atopic dermatitis and seborrheic dermatitis, while pruritus was the predominant presenting symptom. Early identification of etiological factors and appropriate management can help reduce disease burden and improve patients' quality of life.

Limitations

The study was conducted at a single tertiary care center with a relatively small sample size, which may limit the generalizability of the findings. Patch testing and histopathological confirmation were not performed in all patients, potentially affecting diagnostic accuracy in some cases. Additionally, the cross-sectional design precluded assessment of long-term outcomes and disease recurrence.

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