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CLINICO-EPIDEMIOLOGICAL STUDY OF ECZEMA PATTERNS IN A TERTIARY CARE HOSPITAL

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ABSTRACT

Background: Eczema is a common inflammatory skin disorder characterized by pruritus, erythema, and a chronic relapsing course. The clinical patterns and epidemiological characteristics of eczema vary widely depending on demographic factors, occupational exposure, and environmental conditions. Understanding the local distribution of eczema is essential for effective prevention and management.
Objectives: To evaluate the clinico-epidemiological profile of eczema among patients attending a tertiary care hospital, with emphasis on demographic characteristics, clinical patterns, and associated factors.
Materials and Methods: This hospital-based cross-sectional study was conducted in the Department of Dermatology of a tertiary care hospital over a period of 12 months. A total of 200 patients clinically diagnosed with eczema were included. Data regarding age, gender, occupation, clinical type of eczema, site of involvement, duration of disease, and associated factors were collected using a structured proforma. Diagnosis was made on clinical grounds, and relevant investigations were performed where necessary. Data were analyzed using descriptive statistics.
Results: The majority of patients were males (58%), with the most affected age group being 21–40 years (34%). Contact dermatitis was the most common clinical pattern (32%), followed by atopic dermatitis (22%) and hand eczema (16%). Upper limbs were the most frequently involved site (45%). Occupational exposure was identified as a major associated factor in a significant proportion of patients, and nearly half presented with chronic disease.
Conclusion: Eczema exhibits varied clinico-epidemiological patterns in a tertiary care setting, with contact dermatitis being the predominant type. Occupational and environmental factors play a crucial role in disease occurrence and persistence. Early identification, preventive measures, and patient education are vital to reduce disease burden and improve patient outcomes.

Keywords: *Eczema; Clinico-epidemiological study; Contact dermatitis; Atopic dermatitis.*

INTRODUCTION

Eczema, also known as dermatitis, comprises a group of inflammatory skin disorders that present with itching, erythema, scaling, vesiculation, and, in chronic cases, lichenification. The clinical appearance varies according to disease type, duration, and individual susceptibility. Eczema is among the most commonly encountered conditions in dermatology practice and contributes substantially to outpatient workload worldwide.[1]

Although eczema is rarely associated with mortality, its chronic and recurrent nature results in significant morbidity. Persistent pruritus, sleep disturbance, cosmetic concerns, and frequent relapses adversely affect quality of life and psychosocial well-being. These effects are particularly pronounced in children and working-age adults, leading to impaired academic performance and reduced occupational productivity.[2,3]

The pathogenesis of eczema is multifactorial and involves a complex interaction between genetic predisposition, epidermal barrier dysfunction, immune-mediated inflammation, and environmental triggers. Defective skin barrier

function facilitates increased transepidermal water loss and enhanced penetration of irritants and allergens, which subsequently activate inflammatory pathways mediated by cytokines and T-lymphocyte responses.[4]

Eczema encompasses several distinct clinical entities, including atopic dermatitis, allergic and irritant contact dermatitis, hand eczema, seborrheic dermatitis, nummular eczema, and asteatotic eczema. Each variant differs in age of onset, precipitating factors, anatomical distribution, and disease course. Occupational exposure plays a major role in contact dermatitis and hand eczema, while atopic dermatitis is frequently associated with personal or family history of atopy.[5,6]
The epidemiology of eczema shows wide geographic variation influenced by climatic conditions, occupational practices, socioeconomic status, urbanization, and lifestyle changes. In developing countries, increased exposure to industrial chemicals, detergents, cosmetics, and environmental pollutants has been associated with a rising prevalence of eczema. Seasonal factors such as humidity and temperature fluctuations also contribute to disease exacerbation and recurrence.[7,8]
Clinico-epidemiological studies conducted in hospital settings provide valuable insights into disease patterns, risk factors, and regional variations. Such data are essential for identifying preventable causes, planning targeted interventions, and improving patient education. However, region-specific data on the clinical spectrum and epidemiological characteristics of eczema remain limited in many parts of India.[9]

Therefore, the present study was undertaken to evaluate the clinico-epidemiological profile of eczema among patients attending a tertiary care hospital, with emphasis on demographic characteristics, clinical patterns, anatomical distribution, and associated risk factors.

MATERIALS AND METHODS

Study Design

This was a **hospital-based cross-sectional observational study** conducted to evaluate the clinico-epidemiological profile of eczema among patients attending a tertiary care hospital.

Study Setting

The study was carried out in the **Department of Dermatology, Venereology and Leprology** of a tertiary care teaching hospital catering to urban and rural populations.

Study Duration

The study was conducted over a period of **12 months**.

Study Population

All patients attending the dermatology outpatient department during the study period who were **clinically diagnosed with eczema** were considered for inclusion.

Sample Size:

A total of **200 patients** were included in the study.

The sample size was determined based on outpatient attendance and feasibility during the study period.

Inclusion Criteria

- Patients of **all age groups**
- Both **male and female** patients
- Clinically diagnosed cases of **eczema** (acute, subacute, or chronic)
- Patients willing to provide **informed consent**

Exclusion Criteria

- Patients with other papulosquamous disorders such as psoriasis
- Patients with cutaneous infections mimicking eczema
- Patients receiving long-term systemic immunosuppressive therapy
- Patients with incomplete clinical data or unwilling to participate

Data Collection

After obtaining informed consent, detailed information was collected using a **pre-designed and pre-tested structured**

proforma. The following parameters were recorded:

- **Demographic details:** age, gender, residence (urban/rural), socioeconomic status
- **Clinical details:** type of eczema, duration of disease, site and extent of involvement
- **Occupational history:** exposure to chemicals, detergents, cement, metals, or other irritants
- **Personal and family history:** history of atopy, asthma, allergic rhinitis
- **Aggravating factors:** seasonal variation, sweating, cosmetic use, detergents, occupational exposure

Clinical Examination
All patients underwent a **thorough dermatological examination**. Diagnosis of eczema and its subtypes was made primarily on **clinical grounds** based on morphology, distribution, chronicity, and history. The eczema was classified into different clinical types such as contact dermatitis, atopic dermatitis, hand eczema, seborrheic dermatitis, nummular eczema, and asteatotic eczema.

Investigations
Routine laboratory investigations were performed when clinically indicated. **Patch testing** was carried out in selected cases of suspected allergic contact dermatitis to identify potential allergens. Other investigations were done to rule out differential diagnoses when required.

Statistical Analysis
Data were entered into **Microsoft Excel** and analyzed by SPSS version 20 using descriptive statistical methods. Results were expressed as **frequencies and percentages**. Findings were presented in tables.

RESULTS
A total of **200 patients clinically diagnosed with eczema** were included in the study. The findings are presented under demographic profile, clinical patterns, site distribution, and associated factors.

Eczema was most commonly observed in young and middle-aged adults, with a clear male predominance as shown in Table 1

TABLE 1: Age and Gender Distribution of Eczema Patients (n = 200)

Age Group (years)	Male n (%)	Female n (%)	Total n (%)
<10	12 (6.0)	10 (5.0)	22 (11.0)
11–20	20 (10.0)	16 (8.0)	36 (18.0)
21–40	40 (20.0)	28 (14.0)	68 (34.0)
41–60	28 (14.0)	20 (10.0)	48 (24.0)
>60	16 (8.0)	10 (5.0)	26 (13.0)
Total	**116 (58.0)**	**84 (42.0)**	**200 (100)**

Contact dermatitis was the most prevalent clinical type of eczema, followed by atopic dermatitis and hand eczema as shown in Table 2

Table 2: Distribution of Clinical Types of Eczema

Clinical Type	Number (n)	Percentage (%)
Contact dermatitis	64	32.0
Atopic dermatitis	44	22.0
Hand eczema	32	16.0
Seborrheic dermatitis	24	12.0
Nummular eczema	18	9.0
Asteatotic eczema	10	5.0
Others	8	4.0
Total	**200**	**100**

Upper limbs were the most commonly involved anatomical site, indicating frequent exposure to irritants and allergens as shown in Table 3.

Table 3: Site of Involvement in Eczema Patients

Site Involved	Number (n)	Percentage (%)
Upper limbs	90	45.0
Lower limbs	60	30.0
Face and neck	40	20.0
Trunk	30	15.0
Multiple sites	50	25.0

Occupational exposure was the most common associated factor, followed by personal or family history of atopy as shown in Table 4.

Table 4: Associated and Aggravating Factors

Associated Factor	Number (n)	Percentage (%)
Occupational exposure	76	38.0
History of atopy	54	27.0
Seasonal aggravation	48	24.0
Cosmetic/detergent use	44	22.0
Sweating and humidity	36	18.0

A majority of patients presented with chronic eczema, reflecting delayed consultation and recurrent nature of the disease as shown in Table 5.

Table 5: Duration of Eczema at Presentation

Duration	**Number (n)**	**Percentage (%)**
Acute (<6 weeks)	46	23.0
Subacute (6 weeks–6 months)	64	32.0
Chronic (>6 months)	90	45.0
Total	**200**	**100**

Manual laborers and homemakers constituted the largest occupational groups affected by eczema as shown in Table 6.

Table 6: Occupational Distribution of Patients

Occupation	**Number (n)**	**Percentage (%)**
Manual laborers	56	28.0
Homemakers	42	21.0
Office workers	36	18.0
Students	34	17.0
Others	32	16.0
Total	**200**	**100**

DISCUSSION

Eczema is a frequently encountered inflammatory skin disorder with diverse clinical presentations influenced by age, gender, occupation, environmental exposure, and genetic predisposition. The present clinico-epidemiological study highlights the spectrum of eczema patterns observed in patients attending a tertiary care hospital and provides insight into factors contributing to disease occurrence and chronicity.

In the present study, **male predominance** was observed among eczema patients. Similar findings have been reported in several hospital-based studies from India and other developing countries.[10,11] This trend may be explained by greater occupational exposure among males, particularly in manual labor and industrial settings, as well as increased contact with irritants such as cement, chemicals, and detergents. Sociocultural factors and health-seeking behavior may also influence this observed gender distribution.

The majority of patients belonged to the **21–40-year age group**, representing the most economically productive segment of the population. Increased exposure to occupational and environmental triggers during this period of life likely contributes to the higher prevalence of eczema in this age group. Comparable age distribution patterns have been reported by previous studies, emphasizing the role of lifestyle and work-related factors in disease development.[12]

Contact dermatitis emerged as the most common clinical type of eczema in this study. This finding is consistent with existing literature that identifies contact dermatitis as the predominant form of eczema in tertiary care settings.[13] Frequent exposure to irritants and allergens in occupational and domestic environments is a major contributing factor. The increasing use of chemicals, detergents, cosmetics, and industrial materials has further amplified the burden of contact dermatitis in recent years.

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Atopic dermatitis constituted a significant proportion of cases and was more commonly observed in younger individuals. This observation aligns with the known epidemiology of atopic dermatitis, which is strongly associated with genetic predisposition and often manifests early in life. Previous studies have emphasized the role of personal or family history of atopy in the development of atopic dermatitis.[14] The chronic and relapsing nature of this condition underscores the need for long-term management strategies and patient education.

The **upper limbs were the most frequently involved anatomical site**, reflecting direct and repeated exposure to irritants and allergens. Similar site distribution has been reported in studies focusing on occupational eczema and hand dermatitis.[15] Upper limb involvement often leads to functional impairment and reduced work efficiency, highlighting the importance of preventive measures such as protective gloves and avoidance of known triggers.

A considerable proportion of patients presented with **chronic eczema**, indicating delayed medical consultation, recurrent exposure to aggravating factors, or inadequate early treatment. Chronic eczema is associated with significant morbidity due to persistent pruritus, lichenification, and secondary infections. Previous studies have also reported a high prevalence of chronic eczema in tertiary care hospitals, where patients often present after prolonged disease duration.[16]

Seasonal variation was reported by several patients, suggesting the influence of climatic factors such as humidity, temperature changes, and sweating on disease exacerbation. Seasonal aggravation of eczema has been well documented, particularly in tropical regions, where environmental conditions play a crucial role in disease expression.[17]

Overall, the findings of this study are comparable with earlier reports from similar healthcare settings, reinforcing the multifactorial nature of eczema and the significant contribution of occupational, environmental, and atopic factors.[18],[19] Understanding local clinico-epidemiological patterns is essential for early diagnosis, appropriate counseling, and implementation of preventive strategies aimed at reducing disease burden.

CONCLUSION

Eczema is a common inflammatory skin disorder with diverse clinical patterns and epidemiological characteristics. In this tertiary care hospital–based study, contact dermatitis emerged as the most frequent type of eczema, highlighting the significant role of occupational and environmental exposures. Young and middle-aged adults were most commonly affected, with a male predominance, reflecting increased exposure to potential irritants during the productive years of life. Upper limb involvement was frequent, emphasizing the importance of preventive strategies in occupational settings. Early diagnosis, identification of triggering factors, and patient education are essential to reduce chronicity and improve quality of life in individuals with eczema.

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