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Original Research Article

Clinico-epidemiological Profile of Patients with Eczema Attending A Tertiary Care Hospital

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Abstract

Background: A prevalent inflammatory skin condition, eczema has a variety of clinical and epidemiological patterns that are impacted by environmental, occupational, and demographic variables.

Objective: To evaluate a tertiary care hospital's eczema patients' clinico-epidemiological characteristic.

Methods: Over the course of a year, a cross-sectional analysis of 137 clinically diagnosed cases was carried out. We gathered and examined information on demographics, clinical kind, place of involvement, duration, and related variables.

Results: The age group of 21 to 40 years old had the highest frequency (33.6%), with males making up 57.7% of cases. Contact dermatitis was the most common kind (32.1%), followed by atopic dermatitis (21.9%). The most often impacted area was the upper limbs (45.3%). Nearly half of the patients had chronic conditions, and occupational exposure was the most common contributing factor (38%).

Conclusion: Eczema in this group was mostly contact dermatitis, which was closely connected to occupational and environmental exposures. Early diagnosis, preventative actions, and patient education are critical for reducing chronic disease and improving outcomes.

Keywords: Eczema, Contact dermatitis, Clinico-epidemiological study, Occupational exposure, Atopic dermatitis, Tertiary care hospital, Chronic eczema.

Introduction

In underdeveloped nations, skin conditions are quite common [1]. These conditions vary from minor ailments like scabies and acne to more severe conditions like purpura fulminans, toxic epidermal necrolysis, and Stevens-Johnson syndrome [2]. Due to many ecological conditions, genetics, sanitary standards, and social practices, the prevalence of skin disorders differs from nation to nation and even from region to region within a nation [3].

High morbidity but seemingly lower mortality can result from skin disorders [4,5]. The literature on the pattern of skin disorders is lacking, but it is crucial to keep in mind that skin symptoms may be an indication of the patient's internal illness. Early detection of skin conditions is crucial for both patient care and stopping the spread of infectious illnesses. Any community may lower the prevalence of skin problems by making improvements to environmental cleanliness, public education, and healthy eating [6].

Dermatologists frequently treat individuals with eczema, making it the most prevalent category of inflammatory skin disorders. Although dermatologists regularly use the term "eczema" in their communications, they might not be fully aware of its origins and history.

Eczema was originally called "ekzein (Greek)," which translates to "boil over" or "break out" (Oxford Learner's Dictionaries). Ancient Egyptian literature described comparable skin disorders before eczema received its official name. Skin problems were mentioned in the Ebers Papyrus, one of the oldest known medical records, which was composed around 3000 years ago [7].

Despite being used a lot, "eczema" has been mistaken for "dermatitis" in terminology. Eczema and dermatitis are frequently used interchangeably to refer to a polymorphic pattern of skin inflammation that is marked by erythema, vesiculation, and pruritus, at least during its acute phase [8].

Eczema, commonly known as dermatitis, is a series of inflammatory skin illnesses characterized by itching, erythema, scaling, vesiculation, and, in severe instances, lichenification. The clinical presentation differs depending on the illness kind, duration, and individual vulnerability. One of the most prevalent disorders in dermatological practice is eczema, which significantly adds to the global outpatient burden [9].

Atopic dermatitis (AD), often known as atopic eczema, is one of the representative disorders without a conventional nomenclature employing eczema/dermatitis. Up until the late 1970s, the word "atopic dermatitis" was infrequently used. After that, it became more prevalent than "eczema" and continued to rise until 2015. The prevalence of atopic eczema declined from 2008 to 2015. It is evident that the term "eczema" refers to skin characteristics such as pediatric eczema, flexural eczema, infantile eczema, dyshidrotic eczema, and nummular eczema [10]. In contrast, "dermatitis" is meant to be used for names of diseases like seborrheic dermatitis and contact dermatitis.

Eczematous and itchy lesions at the flexural folds and other typical distributions result from atopic dermatitis (AD), a chronic skin condition caused by malfunction of the skin barrier, environmental variables, and various immune system abnormalities [11].

The course is characterized by acute flare-ups and exacerbations as well as persistent eczematous skin lesions on dry skin with severe itching. Standardized criteria and scoring systems may be used to characterize both the diagnosis and severity of AD, which can range from mild to moderate and severe types. AD only emerges in infancy, persists throughout maturity, or even appears for the first time in adulthood. Thus far, many courses have been recognized.

The disease's trigger factors are varied, and the pathophysiological network involved is rather complicated, despite the fact that the clinical picture, which is typified by acute flare-ups of eczematous, pruritic lesions on dry skin at usual preferences like the flexural folds, is quite homogeneous. As a result, first efforts have been made to categorize AD subtypes according to the most pertinent causative elements in each patient. A thorough understanding of the cofactors influencing AD symptoms and impeding the disease's progression is essential for optimizing such a patient stratification. The risk of AD has been found to be influenced by a wide range of epidemiologic characteristics, including dietary parameters [12], the number of siblings, socioeconomic status, urban environments, and climatic elements [13,14].

The majority of our understanding of the immunologic pathways underlying the pathophysiology of AD has come about recently. AD lesions exhibit increased infiltration of T cells, DC subtypes, macrophages, mast cells, eosinophils, and a variety of cytokines and chemokines [15,16]. Recent research has demonstrated cellular crosstalk and cytokine interaction.

In order to assess the clinico-epidemiological profile of eczema among patients visiting a tertiary care hospital, the current study was conducted, with a focus on anatomical distribution, clinical patterns, demographic features, and related risk factors.

Methodology

Study Design: This cross-sectional observational study was carried out at a hospital to assess the clinico-epidemiological characteristics of eczema in patients receiving treatment at a tertiary care facility.

Study Area: The study was carried out in the Department of Skin and VD at Lord Buddha Koshi Medical College and Hospital in Saharsa, Bihar, India

Study Duration: The research was carried out over one year.

Sample Size: The research involved 137 patients in total. The feasibility and outpatient attendance over the research period were used to calculate the sample size.

Inclusion Criteria

- Individuals of all ages
- Patients, both male and female
- Eczema cases with a clinical diagnosis (acute, subacute, or chronic)
- Patients who are prepared to provide their informed permission

Exclusion Criteria

- Individuals suffering from psoriasis or other papulosquamous conditions
- Individuals who have cutaneous illnesses that resemble eczema
- Individuals undergoing long-term systemic immunosuppressive treatment
- Individuals who are hesitant to participate or have insufficient clinical data

Data Collection: A pre-designed and pre-tested structured proforma was used to gather detailed data after informed permission was obtained. The criteria listed below were noted:

- **Demographic information**: socioeconomic status, age, gender, and place of residence (rural or urban)
- **Clinical information:** kind of eczema, length of illness, location, and degree of involvement
- **Work history**: exposure to metals, chemicals, detergents, cement, or other irritants

- **Individual and family medical history**: atopy, asthma, and allergic rhinitis
- **Aggravating factors:** seasonal variation, sweating, cosmetic use, detergents, occupational exposure

Study Procedure: The Department of Skin and Venereology at Lord Buddha Koshi Medical College and Hospital in Saharsa, Bihar, carried out this cross-sectional study over the course of one year. After receiving informed consent, 137 individuals with a clinical diagnosis of eczema were enrolled. A standardized proforma was used to record clinical and demographic information, including age, gender, occupation, type of eczema, duration, location of involvement, and related variables. Every patient had a dermatological examination, and based on clinical characteristics, eczema was divided into subgroups. Patch testing and routine investigations were carried out when needed. Descriptive statistics were used to examine the data, and the findings were presented as percentages and frequencies.

Clinical Examination: Every patient had a comprehensive dermatological examination. The main clinical criteria used to diagnose eczema, and its subcategories were morphology, distribution, chronicity, and history. Contact dermatitis, atopic dermatitis, hand dermatitis, seborrheic dermatitis, nummular dermatitis, and asteatotic dermatitis are among the several clinical forms of eczema.

Investigations: When clinically necessary, routine laboratory tests were carried out. To find possible allergens, patch testing was done in a few cases of suspected allergic contact dermatitis. When necessary, further tests were conducted to rule out possible diagnosis.

Statistical Analysis: Microsoft Excel was used to enter the data, and SPSS version 20 used descriptive statistical techniques to evaluate it. Frequencies and percentages were used to express the results. The results were displayed on tables."

Result

Table 1 shows that there was a clear male majority among the 137 eczema patients in the research. Of the group, 57.7% were men and 42.3% were women. The age group of 21 to 40 years old had the largest percentage of cases (33.6%), underscoring the susceptibility of people in their prime years to environmental and occupational exposures. Patients over 60 made up 13.1% of the study group, while those between the ages of 41 and 60 made up 24.1%. 10.9% of instances included children under the age of ten, while 18.2% involved teenagers between the ages of eleven and twenty. These results highlight the fact that eczema mostly affects young and middle-aged individuals, and that males are more likely to have it, perhaps as a result of their increased exposure to allergens and irritants at work.

Table 1: Age and Gender Distribution of Eczema Patients (n=137)

Age Group (years)	Male n (%)	Female n (%)	Total n (%)
<10	8 (5.8)	7 (5.1)	15 (10.9)
11–20	14 (10.2)	11 (8.0)	25 (18.2)
21–40	27 (19.7)	19 (13.9)	46 (33.6)
41–60	19 (13.9)	14 (10.2)	33 (24.1)
>60	11 (8.0)	7 (5.1)	18 (13.1)
Total	79 (57.7)	58 (42.3)	137 (100)

With 32.1% of patients, contact dermatitis was the most common clinical kind, as seen in Table 2. Hand eczema made up 16.1%, while atopic dermatitis came in second with 21.9%. Asteatotic eczema (5.1%), nummular eczema (8.8%), and seborrheic dermatitis (11.7%) were less common. Only 4.3% of patients had additional rare variations. These results demonstrate that the predominant clinical pattern in this group is contact dermatitis, indicating the important role that environmental and occupational exposures play.

Table 2: Distribution of Clinical Types of Eczema

Clinical Type	Number (n)	Percentage (%)
Contact dermatitis	44	32.1
Atopic dermatitis	30	21.9
Hand eczema	22	16.1
Seborrheic dermatitis	16	11.7
Nummular eczema	12	8.8
Asteatotic eczema	7	5.1
Others	6	4.3
Total	137	100

Table 3 shows that the upper limbs were the most frequently afflicted place, occurring in 45.3% of patients, highlighting regular contact to allergens and irritants. 19.7% of cases impacted the face and neck, while 29.9% involved the lower limbs. 15.3% of patients had trunk involvement. Furthermore, lesions at several locations were seen in 24.8% of cases, suggesting extensive disease activity. The occupational character of eczema in this population is highlighted by the preponderance of upper limb involvement.

Table 3: Site of Involvement in Eczema Patients

Site Involved	Number (n)	Percentage (%)
Upper limbs	62	45.3
Lower limbs	41	29.9
Face and neck	27	19.7
Trunk	21	15.3
Multiple sites	34	24.8

With 38% of patients reporting occupational exposure, it was shown to be the most significant related factor in Table 4. 24.1% reported seasonal aggravation, and 27% reported a personal or family history of atopy. Sweating with humidity was linked to 18.2% of instances, while the usage of cosmetics and detergents accounted for 21.9%. These results demonstrate how eczema is complex, with both hereditary and environmental factors contributing to the disease's persistence and recurrence.

Table 4: Associated and Aggravating Factors

Associated Factor	Number (n)	Percentage (%)
Occupational exposure	52	38
History of atopy	37	27
Seasonal aggravation	33	24.1
Cosmetic/detergent use	30	21.9
Sweating and humidity	25	18.2

Table 5 shows that the most prevalent presentation, affecting 44.5% of patients, was persistent eczema (>6 months duration). 32.1% of cases were subacute (6 weeks–6 months), and 23.4% were acute (<6 weeks). The majority of chronic cases highlight the need for prompt intervention and patient education since they are a result of delayed consultation, repeated exposure to triggers, and insufficient early care.

Table 5: Duration of Eczema at Presentation

Duration	Number (n)	Percentage (%)
Acute (<6 weeks)	32	23.4
Subacute (6 weeks–6 month)	44	32.1
Chronic (>6 months)	61	44.5
Total	137	100

According to Table 6, the largest occupational category with eczema was manual workers (27.7%), followed by homemakers (21.2%). Students made up 16.8% of cases, while office workers made up 18.2%. Other occupational groups accounted for the remaining 16.1%. The prevalence among homemakers and manual workers emphasizes how exposure to chemicals, detergents, and irritants at home and at work can contribute to the development of eczema.

Table 6: Occupational Distribution of Patients

Occupation	Number (n)	Percentage (%)
Manual laborers	38	27.7
Homemakers	29	21.2
Office workers	25	18.2
Students	23	16.8
Others	22	16.1
Total	137	100

Discussion

According to this study, eczema management is a multifaceted notion that encompasses changes in psychological well-being, social involvement, and physical functioning in addition to the decrease of clinical signs and symptoms. Age, employment, and lifestyle all have an impact on an individual's tolerable amount of control. Evaluating successful care requires both clinician-reported outcomes, such as an objective assessment of severity, and patient-reported outcomes, such as relief from itching and improved quality of life."

A thorough analysis of how long-term control has historically been recorded in clinical studies [17] reflects the multifaceted character of atopic eczema management. While the use of atopic eczema medications or flares (most commonly measured as time to first flare or number of flares) was reported in about a quarter of trials, 91% of trials captured long-term control by including repeated measurement of outcomes, such as clinical signs, quality of life, and itching [17]. Long-term control has not frequently been caught as a cohesive construct using a single instrument, despite the fact that clinical trials have documented particular subdomains found in this study as being significant to patients/caregivers and physicians.

Although several definitions have been put out and utilized in studies, sometimes with little validation, there is no universally accepted definition of an eczema flare [18, 19]. However, our research indicates that patients, caregivers, and medical professionals should consider eczema management as a more comprehensive notion than these earlier definitions. Additionally, we found that treatment escalation in response to a loss of control varies among individuals based on their access to healthcare resources, any concerns they may have about using specific treatments, and the type of treatment (e.g., oral or topical).

Measuring eczema control is difficult because of the variation among patients in the degree of control that is deemed acceptable, as noted by both patients/caregivers and doctors. An individual's expectations regarding the course of their eczema, their treatment, and the extent to which they have come to terms with their condition and the fact that there is no cure may all influence what they consider to be controlled. Future therapy advancements may change expectations regarding the degree of disease control in eczema. It is crucial to take into account how the patient's or parent's expectations could affect eczema control strategies. Depending on the degree of adjustment to the disease, requirements for a patient/parent-reported result may change.

When measuring eczema control, both patient/caregiver and clinician-reported outcomes were deemed significant. Patient-reported outcome measures and a patient-centered approach to healthcare are becoming more widely accepted in the medical world. An analysis revealed that 78% of atopic eczema clinical trials included patient/parent-reported symptoms [20].

A common inflammatory skin condition, eczema can manifest in a variety of ways depending on factors including age, gender, work, exposure to the environment, and genetic susceptibility. The current clinico-epidemiological investigation sheds light on the range of eczema patterns seen in patients visiting a tertiary care facility and sheds light on the variables influencing the development and persistence of the condition.

Most patients were between the ages of 21 and 40, which is the most economically productive age group. The greater incidence of eczema in this age group is probably caused by increased exposure to environmental and occupational factors during this time of life. Previous studies have revealed similar age distribution trends, highlighting the relevance of work-related and lifestyle variables in the development of illness [21].

A number of patients reported seasonal variation, indicating the impact of climatic conditions on illness aggravation, including humidity, temperature fluctuations, and perspiration. Eczema has been shown to worsen seasonally, especially in tropical areas where the climate plays a major factor in how the illness manifests [21].

Overall, the results of this study support the significance of early diagnosis, patient education, and preventative interventions and are consistent with previous publications. To lower the burden of disease and enhance patient outcomes, a comprehensive strategy that incorporates workplace safety, counseling, lifestyle change, and clinical care is crucial.

Conclusion

This study emphasizes the multifaceted character of eczema by highlighting the wide clinico-epidemiological spectrum of the condition among 137 patients in a tertiary care institution. The most common kind, contact dermatitis, highlights the crucial role that occupational exposures to chemicals, detergents, and industrial irritants play in the development of illness. With a distinct male preponderance, young and middle-aged persons were most often impacted, indicating heightened susceptibility throughout the productive years of life when environmental and occupational exposure is at its highest. The influence of direct exposure to allergens and irritants in regular work and home tasks is further reinforced by the prevalence of upper limb involvement. A considerable percentage of patients had chronic eczema, which not only suggests a

delay in seeking medical attention but also emphasizes the condition's recurring nature and the impact of enduring aggravating variables such seasonal fluctuations, humidity, and lifestyle choices. In order to decrease chronicity, enhance quality of life, and lessen the overall burden of eczema in affected populations, these findings collectively highlight the significance of early diagnosis, prompt intervention, and comprehensive preventive strategies, including occupational safety measures, patient education, and lifestyle modifications.

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