



Original Article

Clinico-epidemiological profile of patients with contact dermatitis

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Abstract

Introduction: Contact dermatitis or contact eczema is an inflammatory response of the skin to exogenous stimulus, the contactant or antigen, that may be irritant and /or allergen. Contact dermatitis is one of the commonest dermatological diseases and accounts for 10-15% of new patients. Clinico-epidemiological surveillance is of great importance for the clinical and systematic understanding of the disease.

Aims and Objective: To determine the Clinico-epidemiological profile of patients with contact dermatitis.

Material and Methods: Sixty consecutive patients with clinical diagnosis of contact dermatitis attending outpatient clinic between July 2018 and April 2019 were enrolled for the study. Clinical details regarding age, gender, occupation, onset, duration and progress of dermatitis, sites of dermatitis, seasonal variations, aggravating factors, and personal and family history of atopy and various clinical patterns were recorded.

Results: There were 41 (68.3%) men and 19 (31.7%) women aged between 28 and 79 (Mean 56.2) years. The duration of dermatitis varied from 1 month to 24 years. Seasonal exacerbation was reported by 28 (46.7%) patients. Most common clinical pattern was acro-facial dermatitis in 16 (27%) patients followed by ten (16.7%) patients with dermatitis in airborne contact dermatitis (ABCD) pattern. Both hand dermatitis and acral dermatitis was noted in eight (13%) patients each, facial dermatitis in 6 (10%) patients and mixed pattern in the remaining.

Conclusion: With change in the topography and environmental conditions including occupation the epidemiology, aetiological correlation and the clinical patterns of contact dermatitis varies among people. Present study shows that prevalence of contact dermatitis in general population is high, thus, once we identify the causative agent the preventive and protective measures can be imposed/taken which forms the keystone of successful management and reduction in the number of cases of contact dermatitis.

Introduction

Contact dermatitis or contact eczema is an inflammatory response of the skin to exogenous stimulus, the contactant or antigen, that may be irritant and /or allergen. ICD results from contacts with irritant substances, while ACD is a delayed-type immunological reaction in response to contact with an allergen in sensitized individuals. Contact dermatitis is one of the commonest dermatological diseases and accounts for 10-15% of new patients.¹ Contact dermatitis is an increasing problem worldwide as list of irritants and allergens is increasing day by day and by far the most frequently reported dermatosis of occupational origin. Occupational contact dermatitis (OCD) is contact dermatitis for which exposure at work is the main cause or one of the factors contributing to its occurrence. Hands have been found accounting for almost 90% of cases of contact dermatitis in addition to involvement of other sites (head and neck); while 20-35% of the cases show exclusive hand involvement for which term “hand eczema” or “hand dermatitis” is used.^{2,3} Regardless of the etiology, contact dermatitis presents as eczema in 90% of cases but other types of lesions can be seen, such as erythema multiform, purpuric rash, exanthema, erythroderma, lichenoid eruption, contact allergic granuloma, toxic epidermal necrolysis, photosensitivity reactions, pigmented lesions⁴ also it can be classified clinically into acute, subacute or chronic contact dermatitis Among chemicals, the most common chemical allergens identified were metals (29%), pesticides (18%), rubber additives (15%), fertilizers (5%), disinfectants (2%), and other agents (5%) such as ammonia.⁵ Agriculture workers are also prone to get irritant reaction to artificial fertilizers, disinfectants and cleansers for milking utensils, petrol and diesel oil.⁶ Rubber (in boots, gloves, milking machines), cement, local remedies for veterinary use, wood and wood preservations, antibiotics in animal feed, metals-like nickel, cobalt in fertilizers, chrome in cement, growth factors (quinoxaline

derivatives), farm soil and soil disinfectants, etc. are the other sensitizing agents in agriculture workers.^{7,8} Metals like nickel and cobalt in fertilizers and animal feeds, mercury in insecticides and fungicides, iron, chrome in tools and implements and chromate, alumina, magnesium etc. in cement are other common cause of occupational contact dermatitis among agriculture workers. This study was done as Clinico-epidemiological surveillance is of great importance for the clinical and systematic understanding of the disease.

Aims and Objectives

To study the clinico-epidemiological profile of patients with contact dermatitis in the region.

Material and Methods

Sixty consecutive patients with clinical diagnosis of contact dermatitis attending outpatient clinic at Civil Hospital, Theog, Himachal Pradesh between July 2018 and April 2019 were enrolled for the study. Patients aged <18 years, patients with atopic dermatitis or photodermatitis and pregnant and lactating women were excluded.

History and Clinical examination

- Clinical details regarding age, gender, occupation and hobbies of patients, onset, duration and progress of dermatitis, sites of dermatitis, seasonal variations, aggravating factors, present and past treatment taken, and personal and family history of atopy were recorded.
- A thorough clinical examination was done and Clinical patterns of contact dermatitis were recorded as shown in Table-1.

Table-1: Clinical patterns of contact dermatitis

Sr. no.	Clinical Patterns	Definition
1.	Facial dermatitis	Dermatitis predominantly affecting face and neck; deep recesses of face may or may not be spared
2.	Hand dermatitis	Dermatitis predominantly involving hands with or without dorsal surface
3.	Feet dermatitis	Dermatitis predominantly involving feet with or without dorsal surface

4.	Acral (Hand & foot) dermatitis	Dermatitis simultaneously involving hands, feet and distal extremities
5.	Acrofacial dermatitis	Dermatitis predominantly affecting face and distal extremities
6.	Airborne contact dermatitis (ABCD)	Dermatitis particularly of exposed body parts, including deep creases of face, cubital and popliteal fossae, and other body folds caused by allergens released in the atmosphere
7.	Others	Any other clinical pattern of dermatitis

Results

Sixty patients were recruited of which there were 41 (68.3%) men and 19 (31.7%) women aged between 28 and 79 (Mean 56.2) years. Majority, 50 (83.3%) patients were in the age group of 41-70 years (Table-2). All 60 patients were orchardist mainly involved in growing apples. All 19 (31.7%) women were home makers and involved actively in agriculture work and cattle rearing. Of these, ten (16.7%) patients were also involved in various other professions such as laborer, mason, teacher and a member of zila parishad.

Table-2: Age distribution of Patients

Age distribution (in years)	Number of patients n=60 (%)
20-30	2 (3.3)
31-40	4 (6.7)
41-50	14 (23.3)
51-60	20 (33.3)
61-70	16 (26.7)
71-80	4 (6.7)
Mean age (in years)	56.2

Duration of Dermatitis and exacerbating factors

The duration of dermatitis varied from 1 month to 24 years (Table-3). The majority, 30 (50%) patients had dermatitis for 1-5 years while 22 (36.7%) patients had dermatitis for less than a year at the time of presentation. The majority of the patients had remissions and exacerbations lasting from days to months.

Seasonal exacerbation of signs and symptoms was reported by 28 (46.7%) patients in summers. Some patients implicated multiple exacerbating factors. Ten (16.7%) patients had history of aggravation of itching and redness on sun

exposure. Six (10%) patients implicated pesticides for their dermatitis and exacerbations.

Exacerbations were reported to exposure to soil, cattle fodder, dust, etc. in 4 (6.7%). Two (3.3%) females reported artificial earrings as the cause. Others were not able to identify any causative or exacerbating factor.

Table 3-: Duration of Dermatitis

Duration of Dermatitis (in years)	No. of patients n=60 (%)
1 month – 1 year	22 (36.7)
1-5	30 (50)
6-10	2 (3.3)
11-15	4 (6.7)
> 15	2 (3.3)

Symptoms, Morphology and Clinical Pattern of Contact Dermatitis

Itching was the predominant symptom in all the 60 (100%) patients and 50 (83.3%) patients presented with erythema, edema with or without oozing/crusting or scaling suggestive of acute or sub acute dermatitis. Eighteen (30%) patients with chronic dermatitis predominately showed papulo-plaques with fissuring and lichenification. Most patients had multiple symptoms and lesions with varied morphology.

Most common clinical pattern was acro-facial dermatitis in 16 (27%) patients followed by ten (16.7%) patients with dermatitis in airborne contact dermatitis (ABCD) pattern. Exclusive hand involvement was noted in 8 (13%) patients and other 8 (13%) patients had lesions involving hands and feet (acral dermatitis). Dermatitis was confined to face in 6 (10%) patients. Mixed pattern noted in other 12 (20%) patients showed unspecified clinical pattern of patchy dermatitis with whole or partial body involvement. (Plate 1-3).



Plate 1: Acro-Facial Dermatitis



Plate 2: ABCD pattern



Plate 3: Facial Dermatitis



Discussion

Agriculture is a major occupation in India and nearly 80% of the population living in the rural area is dependent on agriculture. They are exposed to a variety of chemical, biologic, and physical hazards while preparing the soil for planting, fertilizing, cultivating, and harvesting the crops or while taking care of livestock, dairy cattle, poultry, pigs, and sheep. They are also exposed to a number of different agricultural chemicals, veterinary medications, and feed additives. Environmental factors such as

temperature, humidity, and frequent washing also increase the susceptibility of the skin to irritants and allergens. Adequate skin protection is often lacking, particularly during very busy work periods and in hot weather. All 60 patients of our study were orchardist mainly apple growers, involved in cattle rearing apart from few who were also doing other jobs. In our study, of the sixty patients 41 (68.3%) were men and 19 (31.7%) women aged between 28 and 79 (Mean 56.2) years which is similar to the results of verma et al⁹ but contradictory to the results of Statescu et al¹⁰ where contact dermatitis was more in females 66.47% compared with 33.53% in males. However, in our study majority, 50 (83.3%) patients were in the age group of 41-70 years which is similar to results of statescu et al.¹⁰ Almost two third of patients were aged < 60 years being the active years of life needed for the profile of agricultural works. Duration of dermatitis varied from 1 month to 24 years similar to patients of Verma et al⁹ having dermatitis for 4 days to 20 years with relapses and remissions. From the etiological point, Statescu et al¹⁰ shows a variety of factors involved in triggering and exacerbating the disease such that plants in 26.14%, topical drugs and antiseptics in 25.28%, cosmetics in 8.52% etc, however, in our study most common exacerbation factor reported is sun exposure in 16.7%, pesticides in 10%, dust, cattle fodder in 6.7%, nickel in 3.3% patients similar to results of Sharma et al¹¹ where photo aggravation was the most common aggravating factor followed by parthenium and pesticides. Most common clinical pattern was acro-facial dermatitis in 16(27%) followed by ABCD pattern in 10(16.7%), hand and acral dermatitis in 8(13%) each, facial dermatitis in 6(10%) patients in our study which is similar to results of Verma et al⁹ and Sharma et al.¹¹ Hands have been found accounting for almost 90% of cases of contact dermatitis in addition to involvement of other sites (head and neck); while 20-35% of the cases show exclusive hand involvement for which term “hand eczema” or “hand dermatitis” is used.^{2,3}

Conclusion

The epidemiology, aetiological correlation and the clinical patterns of contact dermatitis varies among people according to difference in topography of the area and the living conditions that includes environment/ weather and also with their occupation. Present study shows that prevalence of contact dermatitis in general population is high, thus, once we identify the causative agent the preventive and protective measures can be imposed/taken which forms the keystone of successful management and reduction in the number of cases of contact dermatitis. Therefore, clinico-epidemiological surveillance is of great importance for the clinical and systematic understanding of the disease.

Limitations

Limitation of the study is its small sample size and that patch test could not be performed.

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