

PATTERN OF PRESENTATION OF POMPHOLYX AT A PRINCIPAL REFERRAL POINT IN PORT HARCOURT OVER A PERIOD OF TEN YEARS

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ABSTRACT:

Background

Pompholyx is a type of hand eczema which is characterized by recurrent vesicles and bullae. It is seen commonly in the age group 20-40 years, affects all races and has an equal sex distribution. It is commonly associated with contact allergic dermatitis and atopy. Other associated factors include emotional stress, chronic illness such as HIV and physiological states like pregnancy. Pompholyx is said to be common in warm climate. In which the study area can be classified as such being a tropical climate in the Sub Saharan Africa. Pompholyx is a disease that reduces the quality of living of affected individuals and can be a cause of social stigmatization, often mistaken for a contagious infection such as scabies. It can also be a cause great discomfort to the body and mind leading to work and school absenteeism.

Methodology

It was a retrospective cross sectional study of new pompholyx cases within the period of January 2006 to December 2015 from the new patient clinical register. Folders were retrieved and data was extracted using a semi-structured questionnaire developed from standard written medical literature on pompholyx. Data was analyzed using Statistical Package for Social Sciences version 20.

Results

Thirty six new cases of pompholyx were seen within the period with an average incidence of 0.59% over the ten year period consisting of 22 females and 14 males with age range of 2-65 years. There was no statistical significant relationship between age categories and sex. The majority of cases were seen amongst students. The age 20-45 group constituted the highest number. 61% had a history of contact dermatitis with the major triggers being detergents, chemicals and metals. All patients were counseled and improved after receiving treatment from at least two of the five major classes of drugs- corticosteroids, antifungal, antibiotics, antihistamines and astringents.

Conclusion

Pompholyx is a recurrent hand dermatitis characterized by vesicles and bullae though not common as the study reflects; it can be a source of mental and physical discomfort leading to a poor quality of life in affected individuals.

INTRODUCTION:

Pompholyx, pronounced as 'pom' foh likes' provokes the imagery of water mere looking at the word. In this word contains associations such as pomp that rhymes with pump, water can be pumped out and then holy, holy water.¹ The word pompholyx is taken from the Greek word meaning blister.^{2,3} Pompholyx is a type of hand and foot eczema characterized by vesicles (less than 1cm) or bullae (greater 1cm in diameter) which are fluid filled lesions on

the palms and sole. It is also called vesicular endogenous eczema.³

The term dyshidrotic eczema is used interchangeably with pompholyx, however there are controversies on describing pompholyx as the same as dyshidrotic eczema. Some authorities see both as sub classifications of vesicular palmoplantar eczema in that pompholyx is the acute form of the vesicular palmoplantar eczema, while dyshidrotic eczema is regarded as the chronic or recurrent form. Dyshidrotic eczema is

also called chronic vesicobullous eczema or recurrent hand dermatitis depending on the literature. The term dyshidrotic is a misnomer since evidence has shown from studies that there is no dysfunction of the sweat gland as previously thought by scientists in the late nineteenth century, rather there may be excess sweating.^{4,5,6,7}

Pompholyx is said to be common in the hot periods such as summer and spring. In this our environment, it would be difficult to compare periods when pompholyx is higher due to predominantly hot periods throughout the year. It is commoner in females. It has been associated with genetics, atopy/atopic dermatitis, exposure to metals, detergents and chemicals, pregnancy and emotional stress. It has also been linked to chronic infections like HIV. The cause may be undetermined in some cases. It is often complicated by infections including bacterial and fungal, erythema, scaling and desquamation. The actual aetiology of pompholyx is not clear but many agree it is multifactorial.^{5,16}

Pompholyx is of public health importance because it is a cause of reduced quality of life. It can cause limitation of function both at home and work. It can be a cause of work absenteeism. It can be a source of social stigmatization being that it will often be mistaken as a contagious skin infection even amongst health care workers and may restrict interaction with others. In carrying a retrospective analysis of pompholyx in the centre, this study aims to determine the pattern of presentation, associated factors, and incidence of pompholyx in the centre, review of its current prevention and treatment. This study will contribute to the knowledge of the disease and its prevention and also raise awareness of its management even amongst health care workers.

METHODOLOGY

The study is a retrospective cross sectional analysis of patients with pompholyx within the ten year period of January 2006- December 2015 who attended the Dermatology outpatient clinic of the University of Port Harcourt Teaching Hospital which is the premier tertiary institution in the state.

Patients are referred from other medical units, surgery, pediatric and psychiatry departments. It also receives referral from neighbouring states within the South- South geo political zone as well as other parts of Nigeria. All patients were examined by dermatologists and diagnosis was mainly clinical, exception of some who were suspected to have superimposed infection were sent for skin scrapping mycology and culture. The hospital numbers, age and sex were gotten from the new patients clinical registrar which was used in extracting data from their folders using a semi structured questionnaire which was developed based on existing knowledge and management of pompholyx available in the environment.

Twenty three folders were retrieved. The retrieved data were first entered into a computer based template and exported to Statistical Package for Social Sciences for statistical analysis.

Descriptive statistics using means, standard deviation, frequencies and proportions were employed as appropriate. Tables and charts were used in the presentation of data. Inferential statistics using Chi square test was employed to determine significant differences in proportions of the age categories across the sex of the patients. Statistical significance was set at a level of 0.05.

RESULTS

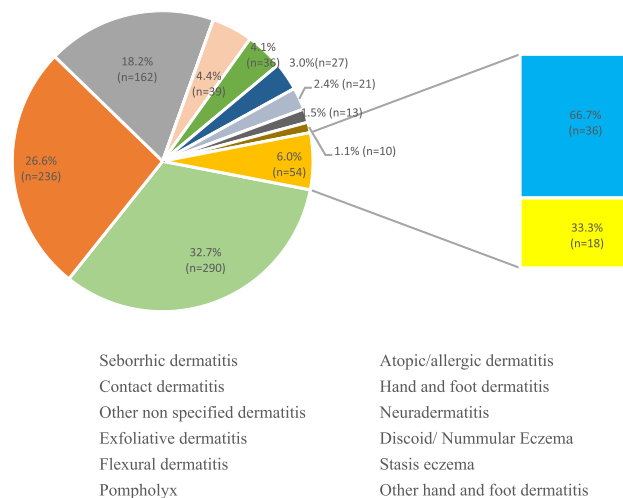


Fig. 1- Showing the proportion of pompholyx and other hand dermatitis vs. other types of eczema

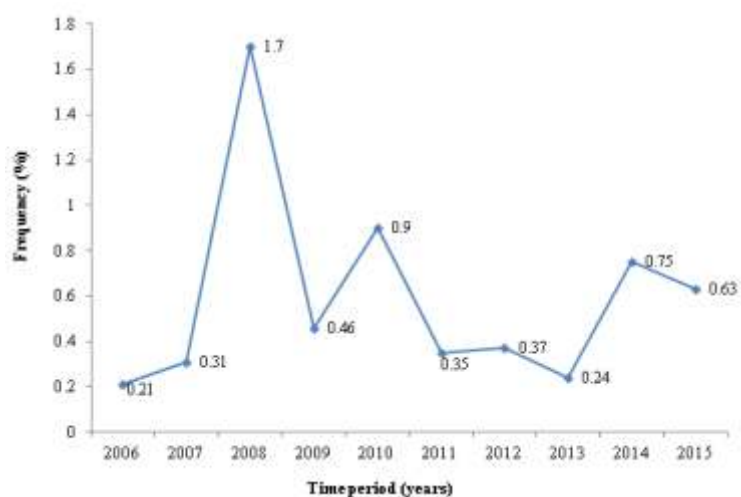


Table 1-Age by sex of patients with pompholyx

Age category	Sex		Total n (%)
	Male n (%)	Female n (%)	
≤5 years	2 (50.0)	2 (50.0)	4 (100.0)
6 – 12 years	1 (50.0)	1 (50.0)	2 (100.0)
13 – 19 years	2 (50.0)	2 (50.0)	4 (100.0)
20 – 45 years	7 (30.4)	16 (69.6)	23 (100.0)
45 – 59 years	2 (100.0)	0 (0.0)	2 (100.0)
≥60 years	0 (0.0)	1 (100.0)	1 (100.0)
Total	14 (38.9)	22(61.1)	36(100)

Fisher's exact test = 5.026; p-value = 0.405

Table 2-Socio-demographic characteristics of patients with pompholyx

Variables	n	%
Age in years (N=36)		
≤5 years	4	11.1
6 – 12 years	2	5.6
13 – 19 years	4	11.1
20 – 45 years	22	61.1
45 – 59 years	3	8.3
≥60 years	1	2.8
Sex (N=36)		
Male	14	38.9
Female	22	61.1
Marital status (N=22)		
Single	13	59.1
Married	7	31.8
Divorced	2	9.1
Educational level (N=18)		
Primary	1	5.6
Secondary	8	44.4
Tertiary	9	50.0
Employment status (N=23)		
Unemployed	15	65.2
Employee	5	21.7
Self-employed	3	13.1

Table 3- Occupational status of patients

Occupation (N=23)	n	%
Banker	1	4.4
Civil Servant	1	4.4
Housewife	1	4.4
Lawyer	1	4.4
Unemployed	1	4.4
Teacher	2	8.7
Trader	3	13.0
Student	13	56.5
Total	23	100

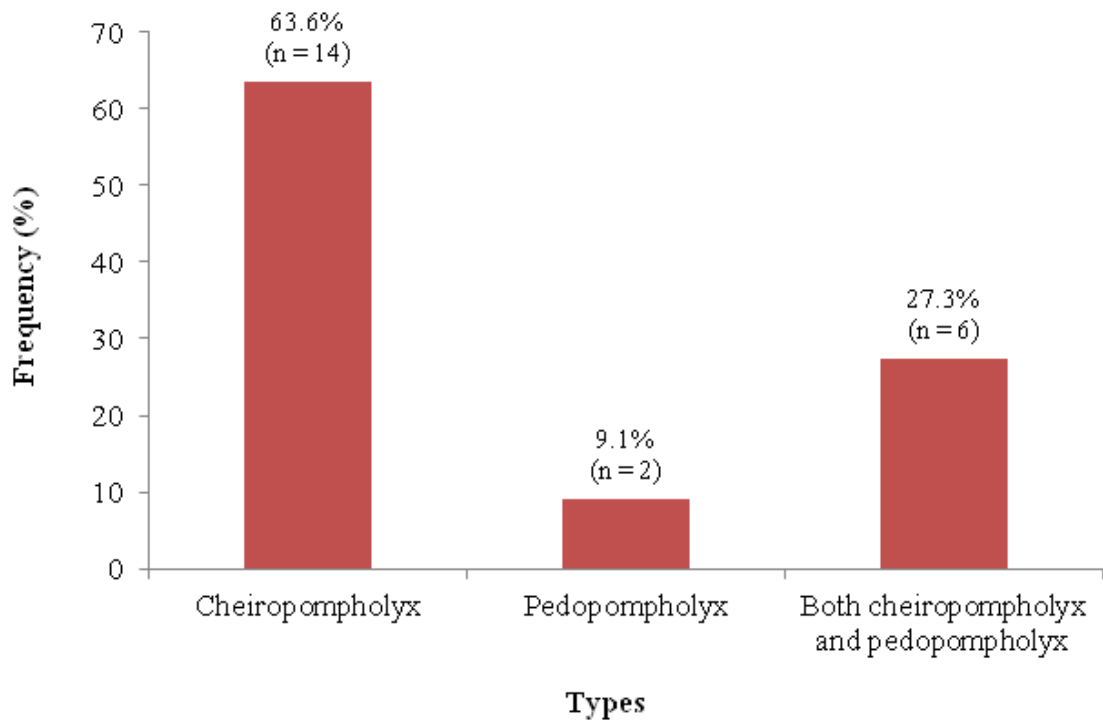


Fig.3...The different classification of pompholyx

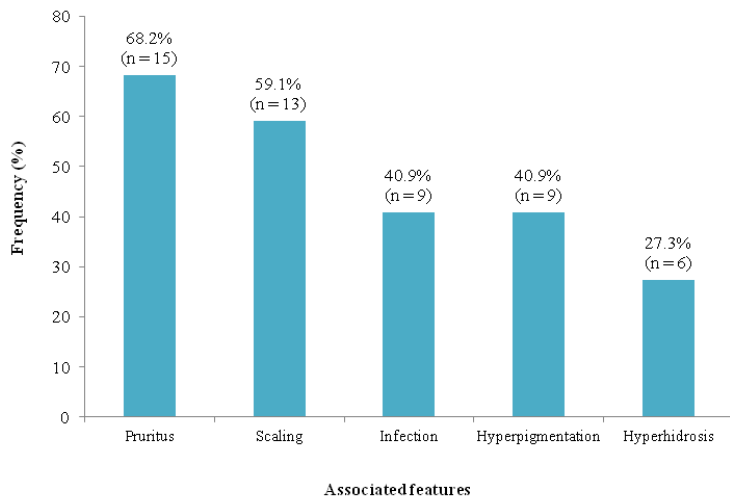


Table 4: Pattern of presentation in patients with pompholyx

Fig 4- Clinical history of patients with pomphol

Variables	n	%
Inter digital clefts (N=15)		
Yes	10	66.7
No	5	33.3
Spread (N=16)		
Back of hands	5	31.3
Dorsum of feet	3	18.8
None	8	50.0
Type of lesions (N=20)		
Vesicles	12	60.0
Bullae	8	40.0
Length of presentation before clinic visitation (N=21)		
<1 week	3	14.3
1 – 4 weeks	10	47.6
5 – 12 weeks	4	19.0
>12 weeks	4	19.0
Recurrence period (N=20)		
<1 year	13	61.9
1 – 5 years	7	33.3
>5 years	1	4.8

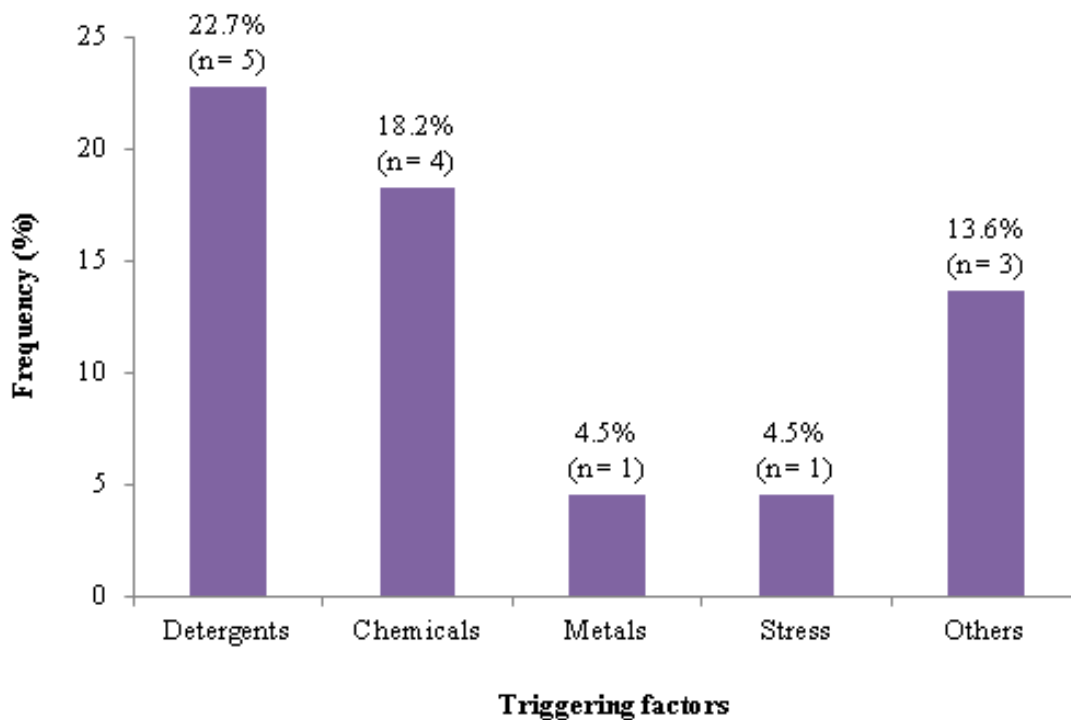


Fig 5- Distribution of triggering factors in patients with pompholyx

Table 5- Past medical and family history of patients with pompholyx

Variables	n	%
History of asthma		
Yes	3	14.3
No	18	85.7
History of atopy or allergic condition		
Yes	8	36.4
No	14	63.6
Family history of similar lesions		
Yes	0	0.0
No	22	100.0

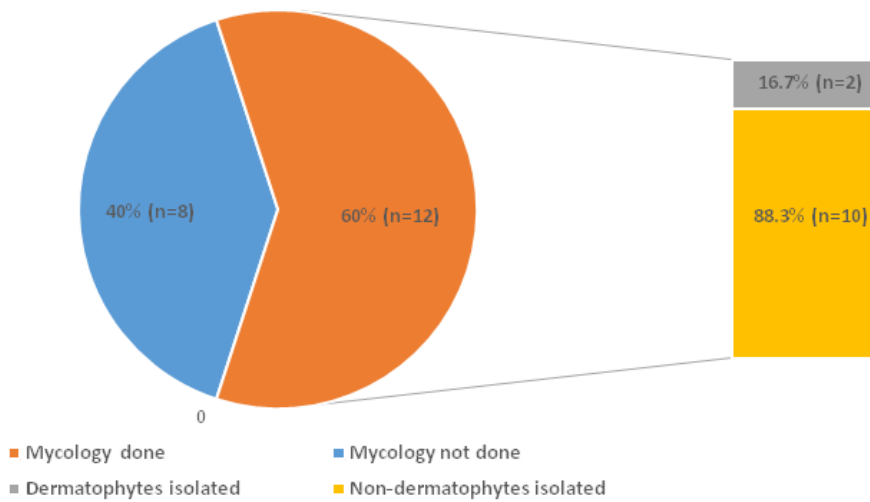
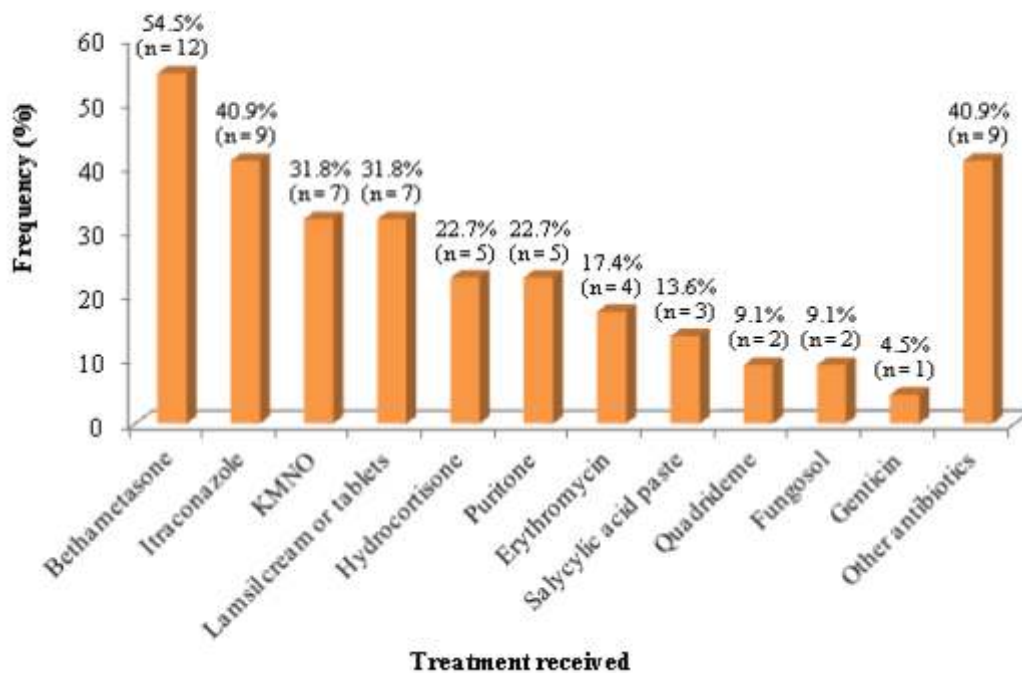


Fig.6 -Bar of a pie chart showing findings from skin scrapping for mycology and culture among patients tested

Table 6 -HIV status of patients with pompholyx

HIV Status	n	%
Positive	0	0.0
Negative	22	100.0





Pompholyx in a teenager with positive history of



Burst pruritic vesicular lesions with erythematous base

DISCUSSION

From the study the average incidence of pompholyx constituted less than 5 % of all cases of eczema within the ten year period with the range being from 0.21-1-7. This value is similar to prevalence studies done where the one year prevalence of 0.5. ^{4, 6} Hand Dermatitis

constituted 6% of all new cases of eczema within the ten year period. Pompholyx had made more than 65% of all cases of hand dermatitis seen within that period. This is in contrast to other studies that showed pompholyx to constitute of 5-20% of all cases of hand dermatitis.⁷

In another study carried out in Sweden showed that 3% of hand dermatitis was as a result of pompholyx. It constituted of 1% of all new cases seen within the dermatology clinic and about 0.05 % of Swedish population has been diagnosed with dyshidrotic eczema in their lifetime.⁹ This difference may be due to the difference in population while this study is a hospital based one and the other being in a population of a different country and ethnicities.

Pompholyx is known to occur commonly in warm periods, our environment is a tropical one with sunshine available in most parts of the year. It is also noted that most of the prevalence studies for vesicobullous hand eczema are carried out in occupational settings. The disparities in the actual definitions of pompholyx in different localities may also affect the incidence.⁴

Pompholyx is commonly seen in the young population which usually represents the greater portion of the work force and reproductive age of most countries of the world. This study is in keeping with most other epidemiological studies carried out.^{4,9} Table 1 shows that there was no statistical significant relationship between age categories and sex although females were slightly more in this study. This is in keeping with other studies that had been done which shows equal distribution in both sexes. More females seen in this study is quite understandable since women have more exposure to domestic irritants in this our own environment. It may also be of more cosmetology importance to women. Most of the persons with pompholyx were single, majority at least a secondary school education and more than half were unemployed. These are all common characteristics of the young demographics of the patients with the disease. Single people often tend to socialize more; pompholyx can be a source of social stigmatization so they are likely going to seek for treatment when compared to the other age groups. The high number of

persons who are educated may account for the health seeking behaviour of the group instead of resorting to unorthodox methods of treatment. Being unemployed may resort to them doing several odd jobs thus being exposed to different stimuli that may affect them.

Cheirropompholyx consists of a majority of cases seen in this patient. This is understandable since the hands are likely more exposed when compared to the feet while working in most occupations. This is in keeping with other studies. A combination of both accounted for the next size. The feet were involved in total of 36.4%. In a similar study eczema of the feet was seen in 30% of the cases of hand dermatitis.¹⁰ However only 9.1% (2) cases involved only the feet. Pruritus is a major associated feature as seen in this study with almost three quarter of patients having pruritus and the least common is hyperhidrosis with slightly above one quarter having this symptom. It is said that hyperhidrosis is a provoking factor in 2 out of every 5 patients with dyshidrotic eczema.⁵ It is sometimes difficult to distinguish between associated features and complications. Fungal infections can cause pompholyx what some consider as id reaction but other authorities consider it to be pompholyx.^{4, 5} These fungal infections can be superimposed by bacterial infections. Clinical features of pompholyx may be a reflection of an infection, progression to the chronic form or a mechanism or response by which the body tries to resolve the disease. In majority of the cases itching was found.

This may likely be due the presence of infections with such as tinea pedis or allergic reactions causing a release of histamines. Hyperhidrosis serves as good culture medium for Infection which may be fungal or bacterial. It was a clinical feature seen in one third of persons done in study of 120 patients.⁹ The constant irritation, itching, predisposed by the excessive sweating and inflammation from infective and allergic causes can lead to desquamation of the soles and feet. This is seen as whitish flakes known as scales. Hyperpigmentation follows increased production of melanin and this can be post inflammatory following the cascade of the above events.

In terms of clinical presentation of pompholyx,

about two thirds had interdigital cleft affectation. This is a very challenging manifestation for a non dermatologist in our environment who will likely see it as a case of scabies and may prescribe treatment which may not be effective causing more worries for the patient. There was equal preponderance between spread and non spread of the lesions to the back of the hands and/or feet. This may likely depend on the immunity of the patient and if there is co- existing contact dermatitis. In terms of the clinical types, vesicular lesions were more common than bullous disorders. They made up two thirds of the lesions. The length of time which the current lesions lasted before they presented to the hospital was highest for those who had the lesions for 1-4 weeks.

Although it is know that the lesions tend to spontaneously heal by 2-3 weeks this might not be the case here since often times people would have had self medication thus worsening the outcome even before they visit the hospital. Very few persons had the recurrence period

lasting greater than 5 years. The fact this study reflects a young educated group might account for relative early presentation to the dermatologist.

Contact dermatitis was implicated in about 61% of cases seen. This is similar to another study which showed that 67.5% of pompholyx patients had allergic contact dermatitis.⁹ The triggering factor most implicated were detergents followed by other chemicals. It is not surprising since detergents are used in a variety of household chores particularly in the study area were some persons might not be privileged to have a washing machine either for dishes or clothes due to its high cost and maintenance. Sometimes the triggering factor may not be known. From clinical history other triggers included metals, emotional stress, clothes and occasionally non-specified materials. Patch testing was not done for any of patients to confirm and also exclude other triggers. These triggering factors implicated are similar to other studies done.^{9,11}

The history of asthma was found in very few patients; however there was a history of atopy in almost two fifths of the patients. This finding is similar to one done in a case control study in Togo were atopy was found to be a very likely cause of pompholyx.¹¹ There was no known family history

of similar lesions in family members in all patients whose case folders were retrieved, nevertheless pompholyx is known to have a familial predisposition and the gene for a rare form of autosomal dominant pompholyx has been mapped to chromosome 18q in a study in China.¹²

In about 87% (20) infection was suspected and a skin scrapping for mycology and culture was requested. Out of this 20 cases two thirds carried out the test. The outcome showed only 2(16.7%) cases had dermatophytes isolated. The isolated dermatophytes were epidermopyton species. Mycosis has also been implicated as a causative factor in other studies as well.^{9,11}

None of the cases seen were HIV positive in this study. It is known that pompholyx can be HIV dermatitis and can also occur as an Immune Reconstitution Inflammatory Syndrome (IRIS) finding after antiretroviral therapy.^{13,14}

There was no known clinical history of pregnancy in any of the female patients neither was pregnancy test requested from any of them however it is known that pregnancy might be a predisposing factor to pompholyx.¹⁶

The various treatment received by patients with pompholyx is displayed in the Figure 7 above. In the treatment of pompholyx various classes of drugs may be used to achieve different purposes. The aim of treatment is to reduce inflammation, treat infection, and reduce pruritus and dryness; and reassure patients and relatives.. All patients were counseled on the disease and its progression and advised to avoid triggers. After being treated all made significant improvement. The commonest drug prescribed was bethamethasone which is a high potent topical corticosteroid. It is known that topical corticosteroids are the cornerstone for therapy in hand eczema.¹⁵ Hydrocortisone which also a corticosteroid can be applied topically or given as a systemic drug. Other classes of drugs used include antifungal-(Itraconazole, ketoconazole miconazole(Fungusol) and terbinafine(Lamisil)), anti histamine(piriton), astringents (potassium permanagate), keratolytic(salicylic acid paste) and antibiotics(erythromycin, gentamicin).

Fungal and bacterial infections can complicate pompholyx thus may be required in the management of pompholyx as seen in this study. Fungal infections can also affect the nails thus a keratolytic such as salicylic acid can be used in treatment as seen in this study.

Quadriderm is a topical combination of four drugs – bethametasone -17 valerate(Corticosteroid), gentamicine sulfate(antibiotic), tolnaftate(antifungal) and clioquinol(an antifungal with activity against protozoal and viral organisms). The drug is also know to be effective and was used in few cases as shown in this study.

CONCLUSION

Pompholyx is a recurrent hand eczema which can cause a decline in the quality of life thus is a disease of public health importance. It can be a source of school and work absenteeism, as this study reflects majority of the cases were students. Counseling on possible triggers and avoidance of irritants with the application of topical corticosteroids are major cornerstones in management.

RECOMMENDATION

Awareness on the triggers of pompholyx should be created amongst the general public particularly in schools both to students and staff.

Continuing Medical Education should contain topics on eczema including pompholyx and other hand dermatitis.

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