

## A Prospective Study of Clinical profile of Forefoot Eczema in Gwalior Chambal Region

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### Original Research Article

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**Abstract:** Dry fissured dermatitis of the plantar surface of the feet is the characteristic features of the Forefoot eczema (FE). To study clinical profile and etiological factors in patients suffering from FE. Sixty five patients of FE were studied at Sharma Hospital, Gwalior from February 2017 to July 2017. A detailed history and clinical examination was done and observations were recorded in excel sheet. Fungal scrapings and patch test was performed in all the patients. Maximum patients were female (73.8%). Age of the patients ranged from 12-42 years with mean age of 20.34±5.26 years. Maximum patients had disease duration of 2 years (43.07%). Maximum patients reported deterioration of disease symptoms in cool months (47.7%). Pruritus was the most common complain (58.5%). Plantar surface of great toe (36.9%) was the most common involved site. FE is a typical dermatosis affecting patients in second decade of life predominantly affecting females, with a multifactorial etiology, possible factors being chronic irritation, atopy, footwear and seasonal influence.

**Keywords:** Forefoot eczema, atopy, pruritus, plantar surface.

### INTRODUCTION

Forefoot eczema (FE) is characterized by the presence of dry, fissured dermatitis of the plantar surface of the feet. Reports have shown that it mainly occur in patients which are in first and second decade of their life[1].

Allergic contact dermatitis to footwear, dermatophyte infection and boniness of the foot and use of occlusive footwear are the some etiological causes for the development of the FE[2].

FE is an important clinical diagnosis, however skin scraping in order to exclude fungus disease by patch test to exclude footwear allergy is recommended[3]. In present study we tried to evaluate the clinical profile of FE and to study the possible etiological factors of FE.

### MATERIALS AND METHODS

Present prospective observational study was performed on 65 patients with FE at Sharma Hospital, Gwalior from February 2017 to July 2017.

Patients having erythema, fissuring, scaling of the soles with or without involvement of the dorsa of the feet were included in the present study. Patients having well-defined plaques suggestive of psoriasis or with a history suggestive of allergic contact dermatitis were excluded from the present study.

A detailed history was obtained from the each patient in terms of age of onset, duration of disease

seasonal variation, presence of pain or pruritus, personal and family history of atopy, and the areas of the foot affected.

The diagnosis of FE was done on clinical grounds by the dermatologist after excluding dermatophyte infection and allergic contact dermatitis. Potassium hydroxide mounting was performed to rule out the presence of dermatophyte infection. Patch testing was done in those patients who had involvement of the dorsa of the feet and/or history of aggravation with use of socks/footwear.

All the data analysis was performed using IBM SPSS ver. 20 software. Quantitative data was expressed as mean ± standard deviation (SD) whereas categorical data was expressed as percentage. Cross tabulation and frequency distribution was used to prepare the table and Microsoft excel 2010 was used to prepare the required graph. Level of significance was assessed at 5% level.

**RESULTS**

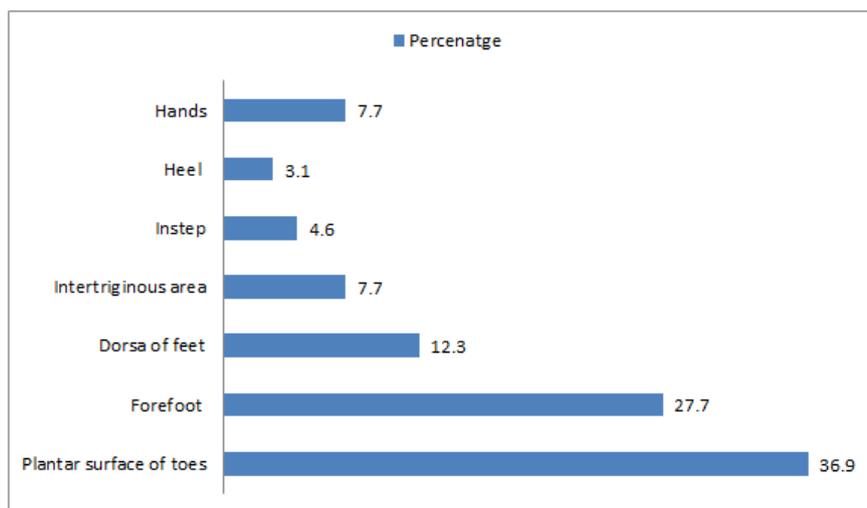
Out of 65 patients, most of the patients were female [48 (73.8%)] followed by male [19 (29.2%)]. Age of the study cohort ranged from 12 to 42 years. Most of the patients had duration of disease for ≤2 years [28 (43.07%)].

Out of 65 patients, 31 patients (47.7%) reported the deterioration in clinical symptoms during monsoon

and winter season and relative improvement during the summer.

Maximum patients complained about the pruritus [36 (58.5%)] followed by 18 (27.7%) patients who had complain regarding pain due to fissuring.

Plantar surface of great toe and other toes was the most common involved site in 24 (36.9%) patients followed by forefoot in 18 (27.7%) patients.



**Graph-1: Sites of affection of eczema**

Twelve patients gave (18.5%) a personal history of atopy while 8 (12.3%) reported a family history. Out of 65 patients, patch testing was done in 28 (43.07%) patients who either had involvement of dorsa of the feet and or aggravation with footwear or socks. Patchtesting was found negative in 21 (75%) patients.

**DISCUSSION**

Characteristics of FE include smooth red-glazed appearance of the skin with fissuring, loss of epidermal ridge pattern and fine scaling. FE has the orientation for the distal parts of the soles and toes mainly the great toe avoiding the intertriginousspaces[4].

FE was first reported in 1968; depending on the author’s beliefs concerning its pathogenesis and possible association with atopy it has been known by several names including juvenile plantar dermatitis [5] forefoot dermatitis, atopic winter feet, dermatitis plantarissicca, forefoot eczema, peridigital dermatitis, sweating sock dermatitis[6].

The average age of onset revealed in present study was 12 to42 years but it frequently occurs in adults. In present study mean age of the onset of FE was second decade of age. The female preponderance was observed in present study. Higher percentage of female involvement in present study may be due to the fact that

women perform more wet work as compared to males[6].

Many patients complained of redness, irritation, cracking soreness and pruritus in present study but these signs are not commonly reported; however in present study most of the patients reported pruritus as the most common one[7].

Most common site involved was the plantar surface of great toe. Other weight bearing areas were subsequently affected, but there was relative sparing of the instep and interdigital web spaces.

In several studies aggravation of the disease has been reported in summer season, it may be due to the increased frictional activity in summer season. However, improvement is reported in cooler months [8]. In present study none of the patients reported remission in winter season. The improvement in summer in our patients could be attributed to sweating that may have softened the skin. Similar reports were revealed by the Kumar *et al.* [9].

Small sample size of the study is a limitation; a large randomized clinical trial is needed to strengthen the present study findings.

**CONCLUSION**

FE is a distinctive dermatosis of the second decade mainly, predominantly in female population, with a multifactorial etiology, the possible factors being chronic irritation, atopy, footwear and seasonal influence.

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