

Clinical Evaluation of Minor Clinical Features of Atopic Dermatitis

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Background: Recently doubts have been raised regarding the diagnostic significance of some of the minor clinical features of atopic dermatitis (AD) proposed by Hanifin and Rajka. Some of them may be nonspecific and racial difference was suggested.

Objective: The purpose of this study is to evaluate the diagnostic significance of 14 minor clinical features out of Hanifin and Rajka's 23 minor features of AD in the Korean pediatric population. The significance of 5 more items was evaluated as additional minor features.

Methods: The difference in frequency of the total 19 features of AD was compared between 100 patients with AD and 76 controls.

Results: Fourteen of these were shown to be significantly more frequent in patients than in controls including our 5 additional clues such as scalp scaling, postauricular fissure, infraauricular fissure, forehead lichenification, and infragluteal eczema.

Conclusion: Our study about the minor features may be a valuable guideline for the diagnosis of AD in the Korean pediatric population. (*Ann Dermatol* 5:(1) 9-12, 1993)

Key Words: Minor clinical features, AD

In 1980, Hanifin and Rajka¹ proposed an array of major and minor features to make a diagnosis with certainty of atopic dermatitis (AD) based on the history and clinical picture. Since there is no specific clinical or biological marker for AD, the criteria by Hanifin and Rajka have generally been used.

Recently doubts have been raised regarding the diagnostic significance of some of these minor features and some authors²⁻⁵ suggested that some of the minor features are nonspecific and racial difference may be present⁶⁻⁷.

The purpose of this study is to evaluate the diagnostic significance of 14 minor clinical features out of Hanifin and Rajka's 23 minor features of AD in the Korean pediatric population. These 14

items were chosen because they were considered to be relatively more frequently observed and could be more objectively evaluated. Those items which depended upon laboratory work or ophthalmologic examination and could be obtained by ambiguous history such as early age of onset or food intolerance were excluded. In addition, we also tried to determine the significance of scalp scaling, postauricular fissure, infraauricular fissure, forehead lichenification, and infragluteal eczema as additional minor features of AD.

PATIENTS AND METHODS

One hundred patients with AD and 76 controls were included in this study. All individuals were between 5 months and 15 years old. Average age was 5 years for AD and 6 years for controls and male to female ratio was 61:39 for AD (Table 1) and 35:41 for controls.

Atopic Dermatitis: Diagnosis was made according to classical major criteria of Hanifin & Rajka.

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Minor features under study were not considered for the diagnosis of AD. All patients presented a typical clinical picture of AD and the degree of morbidity varied from slight to severe.

Controls: The individuals who had neither personal nor family history of any atopic disorder were selected. None of them had eczematous lesions on any area at all at the time of examination. They were recruited from pediatric dermatology clinic of Seoul National University Hospital and had various disorders, especially vitiligo and nevus.

Minor features of AD: The following minor features were studied; xerosis, ichthyosis, palmar

hyperlinearity, keratosis pilaris, nonspecific hand-foot dermatitis, nipple eczema, cheilitis, Dennie-Morgan infraorbital folds, orbital darkening, pityriasis alba, anterior neck folds, itch when sweating, intolerance to wool, and perifollicular accentuation. Each lesion of these features was defined as that originally described by Hanifin and Rajka (1980). In addition, the significance of 5 more lesions such as scalp scaling, forehead lichenification, postauricular fissure, infauricular fissure, and infragluteal eczema was evaluated as minor diagnostic clues to AD. All of the above features were present at the time of examination except itch when sweating, intolerance to wool. Information about these was obtained from the history alone. All of the features were subjectively evaluated as 'present' or 'absent' when there was no doubt in the examiner's mind.

For each parameter the difference in frequency was tested with the chi-square test.

RESULTS

The frequency of 19 features of AD investigated in patients with AD and in controls is shown in Table 2.

Table 1. Age and sex distribution of patients with AD.

Age (year)	Male	Female
0-2	10	7
2-4	18	15
4-6	15	6
6-8	7	3
8-10	6	2
10-12	3	4
> 12	2	2
Total	61	39

Table 2. Frequency of 19 minor features in patients with AD and in controls.

Minor Features	AD	Controls	P-value
	(n=100) No (%)	(n=76) No (%)	
Xerosis	82 (82)	13 (17.1)	P<0.01
Ichthyosis	11 (11)	1 (1.3)	P<0.05
Palmar hyperlinearity	25 (25)	7 (9.2)	NS ^a
Keratosis pilaris	25 (25)	10 (13.2)	NS
Nonspecific hand-foot dermatitis	43 (43)	7 (9.2)	P<0.01
Nipple eczema	2 (2)	0 (0)	NS
Cheilitis	25 (25)	6 (7.9)	P<0.01
Dennie-Morgan folds	23 (23)	4 (5.3)	P<0.01
Orbital darkening	40 (40)	1 (1.3)	P<0.01
Pityriasis alba	14 (14)	12 (15.8)	NS
Anterior neck folds	27 (27)	14 (18.4)	NS
Itch when sweating	75 (75)	9 (11.8)	P<0.01
Intolerance to wool	46 (46)	2 (2.6)	P<0.01
Perifollicular accentuation	38 (38)	13 (17.1)	P<0.01
Scalp scaling ^b	48 (48)	9 (11.8)	P<0.01
Postauricular fissure ^b	34 (34)	1 (1.3)	P<0.01
Infraauricular fissure ^b	55 (55)	1 (1.3)	P<0.01
forehead lichenification ^b	23 (23)	0 (0)	P<0.01
infragluteal eczema ^b	10 (10)	0 (0)	P<0.05

^aNS: not significant (P>0.05)

^badditional minor features authors included

Fourteen of these were shown to be significantly more frequent in patients than in controls including our 5 additional clues such as scalp scaling, postauricular fissure, infraauricular fissure, forehead lichenification, and infragluteal eczema. However, palmar hyperlinearity, keratosis pilaris, nipple eczema, pityriasis alba and anterior neck folds were encountered about as often in AD as in controls.

DISCUSSION

Recently studies have shown that some of the minor criteria for AD proposed by Hanifin and Rajka are probably not as significant as previously thought in making a diagnosis. Mevorah et al² reported that keratosis pilaris and palmar hyperlinearity were of no help in diagnosing AD, and these authors³ later reported the lack of significance of anterior neck folds and Dennie-Morgan infraorbital folds. Uehara and Hayashi⁴ reported that the palmar hyperlinearity was not specific for AD and was actually a manifestation of concomitant ichthyosis vulgaris in Japanese. Uehara⁵ also reported that infraorbital folds developed when lower eyelid was affected with eczematous dermatoses of diverse origins and was of no diagnostic significance for AD. In a study of AD in Chinese⁶, keratosis pilaris and pityriasis alba were not prominent as minor features of AD. Kanwar et al⁷ reported that anterior neck folds, nipple eczema, cheilitis, and perifollicular accentuation were not prominent features in AD.

The incidence of 5 items in our study was considered not to be significant. Comparison of our results with those of other authors reveals the followings: 1) palmar hyperlinearity was reported not to be prominent by Mevorah et al² and Uehara and Hayashi⁴ but to be prominent by Kang and Tian⁶ and Kanwar et al⁷, 2) keratosis pilaris was reported not to be prominent by Mevorah et al² and Kang and Tian⁶ but to be prominent by Kanwar et al⁷, 3) pityriasis alba was reported not to be prominent by Kang and Tian⁶ but to be prominent by Mevorah et al³ and Kanwar et al⁷, 4) nipple eczema was reported not to be prominent by Kanwar et al⁷ but to be prominent by Kang and Tian⁶ and Mevorah et al³, 5) anterior neck folds was reported not to be prominent both

by Mevorah et al³ and Kanwar et al⁷.

Kanwar et al⁷ reported that cheilitis was not prominent but other authors^{3, 6} including us generally agreed that cheilitis was a prominent finding. We and Kanwar et al⁷ observed Dennie-Morgan folds as a prominent feature and this observation was quite contrary to other authors' reports^{3, 5, 6}. It was a little difficult to evaluate anterior neck folds because obesity itself could sometimes give us a false positive impression but atopic patients were generally not obese and ambiguous cases were excluded in our study. Another point worth mentioning is that although Chinese study⁶ reported nipple eczema was observed relatively often (up to 20%), we found the cases of nipple eczema only in 2 among 100 patients.

Various studies done until now give us quite confusing data about their diagnostic significance, and suggest that direct comparison of such clinical data may not be reliable because of ethnic differences, and variations in definitions of each minor features, materials and methods. However, there needs to be a guideline for the minor features on the ethnic bases and features like xerosis, nonspecific hand-foot dermatitis, orbital darkening, itch when sweating, and intolerance to wool seem to be universally prominent.

Mevorah et al³ included infraauricular fissure and Kanwar et al⁷ scalp scaling as additional minor features in their study, and we also found them important diagnostically. Infragluteal eczema was mentioned as a characteristic manifestation in atopic children of school age⁸. Infragluteal eczema may represent a typical flexural involvement which is included as one of the major features for AD, but was characteristic enough to be mentioned separately as a minor feature. We specifically added postauricular fissure and forehead lichenification to the minor features based on our clinical experience, and found them to be significant, too.

Some other interesting findings were described as a possible manifestation of atopy. Marks and Simons⁹ reported that geographic tongue may be a manifestation of atopy and Kang and Tian⁶ also found it to be relatively frequent in their infantile age group. But we found only one case of geographic tongue in 2-year-old girl. Clover et al¹⁰ reported that reticulate pigmentation of the

neck ('Dirty Neck') was seen in some subjects with AD but we did not pay attention to this in our study.

Minor features of AD may be different and new clinical findings may be added to those according to the age group studied or race. Anyway in our study of Korean pediatric population, palmar hyperlinearity, keratosis pilaris, nipple eczema, pityriasis alba, and anterior neck folds did not have a diagnostic significance. However, scalp scaling, post-or infraauricular fissure, forehead lichenification, and infragluteal eczema were significant and worth being mentioned as additional characteristic minor features.

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