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Research Article

PROGNOSTIC MARKERS OF ALOPECIA AREATA IN CHILDHOOD

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A B S T R A C T

Alopecia areata is a common, chronic, inflammatory disease causing non-scarring hair loss of scalp and/or body. The severity ranges from few small patches to generalized alopecia, where the former shows good prognosis and the later have poor prognosis for hair regrowth. Incidence in general population is 0.1%-0.2%. It can occur at any age, but peak age of onset is between 2nd and 4th decade of life. The frequency of AA is almost equal in both sex. Characteristic dermoscopic features of AA are yellow dots and or black dots, broken hair, tapering hair (exclamation marks) and short vellus hair. Alopecia areata is also associated with several autoimmune diseases like Vitiligo vulgaris, Lichen planus, hypothyroidism, Morphoea, etc.

Aim: To identify the markers associated with severe forms of Alopecia Areata in pediatric patients.

Material and Methods: It was hospital based cross sectional study of 24 patients of Alopecia Areata of pediatric age group who attended the skin OPD between June 2018 to December 2018. Dermoscopic examination findings, clinic epidemiological data, nail findings and history of autoimmune disease were obtained from the patients.

Results: Out of 24 pediatrics patients, 12 were females and 12 males. It was also observed that 8 out of 12 female patient were of oophiatic or subtotalis pattern, where as only 6 out of 12 male children had the oophiatic/subtotalis pattern. Early age of onset and dermoscopic findings such as black dots and yellow dots were observed more frequently in female patients.

Conclusions: Female patients with early age of onset are more prone to develop severe Alopecia Areata, denoting poor prognosis in AA.

INTRODUCTION

Alopecia areata is a common, chronic, inflammatory disease that causes non-scarring hair loss of scalp andor body. The severity of the disease ranges from small patches to complete alopecia, where the former shows good prognosis and the later has poor prognosis for hair regrowth. It accounts for 25% of all alopecias seen by the dermatologists[(1)] and it accounts for 0.7% of new patients of dermatology clinics in India[(2)]. Lifetime Risk in general population accounts for 1.7%[(3)]. The frequency of this disease is almost the same in both sex but some studies suggest a slight male predominance[(2–3)]. It can occur at any age but most patients have their first episode before the age of 40 years and the median age to develop this disease is 33 years[(4)].The disease process of alopecia areata is not completely understood but it has been indicated that there is role of T cell mediated autoimmunity against an unknown autoantigen of hair follicle[(5)].

This autoimmune etiology has also been projected on the basis of its association with various autoimmune diseases, the presence of auto-antibodies and various underlying immunologic abnormalities in the affected sites of these patients. Alopecia areata is associated with several other autoimmune diseases such as Thyroiditis, Lupus erythematosus, Vitiligo, Morphoea, Lichen planus, DM type1, Autosomal recessive autoimmune polyglandular syndrome, celiac disease, ulcerative colitis and multiple sclerosis[(6)].

Clinically it can be characterized according to pattern or extent of hair loss. On the basis of pattern, it can be classified as Patchy AA, Reticular AA, Ophiasis, Sisapho (ophiasis inversus), Diffuse AA. And on the basis of extent of hair loss it can be classified as - alopecia areata, alopecia totalis, alopecia universalis[(7)]Patchy alopecia areata: one, multiple separate or conjoined (reticular) patches of hair loss.Alopecia totalis shows total or near total loss of hair on the scalp, Alopecia Universalis shows total to near total loss of hair on all body surfaces, Ophiasis shows hair loss in a band like pattern along the circumference of scalp more on the temporal and occipital areas and Sisaipho shows extensive Alopecia around scalp except the temporal and occipital areas. The incidence of Patch

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type AA is more than the other severe type of AA, such as Subtotalis or Universalis in adult age groups. Ikada classification is based on associated conditions and course of disease. It is described as- Atopic type, autoimmune type, prehypertensive type and common type[8]. Characteristic dermoscopic features of AA are yellow dots, black dots, broken hairs, tapering hair (exclamation marks), and short vellus hairs[9].Common nail changes associated with AA are- fine pitting, leukonychia ,trachyonychia brittle nails, koilonychias , longitudinal ridging, onychomadesis[10].

AIM

The present study is an attempt to correlate the clinical, epidemiological and dermoscopic findings in the severe forms of Alopecia Areata in the pediatric patients.

MATERIAL AND METHODS

It was cross sectional study of 24 patients of alopecia areata of pediatric age group who attended the skin opd between June2018-December 2018.The following clinical characteristics were recorded for all patients:Age at onset, Family history of AA. History of hypertension, diabetes, hypercholesterolemia, psychiatric disorders, thyroid disease, AD, vitiligo and other autoimmune disorders were obtained.Nail examination was done. Dermoscopic examination was done with a dermlite gen 4 dermoscope at 10x magnification.Centre and the periphery of the lesions were examined.Clinical and Dermoscopic photographs were obtained with ONE plus 3t 12MP camera. Investigations - hematologic tests, thyroid function tests (TFTs), routine biochemistry and lipid profile were done.

RESULTS

Out of total 24 patients of Alopecia Areata, 18 were in the early onset (<13 years) age group and 6 were in the late onset (>13 years) age group. Females were affected more commonly in the early onset age group where as in the late age group, males outnumbered the females.

Table 1 shows the gender and the age at the onset of disease.

Gender	Early onset(n=18)	Late onset (n=6)
Male	8	4
Female	10	2

Table 2 Shows the pattern of Alopecia Areata in the early and late onset Alopecia Areata patients.

Pattern	Early onset (n=18)	Late onset(n=6)
Patchy alopecia areata	7	3
Subtotalis	5	3
Universalis	1	0
Ophiasis	5	0

Table 3 Associated diseases in patients of early and late onset alopecia areata.

Associated disorders	Early onset (n=18)	Late onset(n=6)
Atopic dermatitis	2	1
Hypothyroidism	1	0
Vitiligo	1	0
Lichen sclerosis et atropicans	2	0

Table 4 shows the pattern of Alopecia in the male and female patients of Alopecia areata.

Type of alopecia	Male(n=12)	Female(n=12)
Patchy	6	4
Subtotalis	4	4
Ophiasis	2	3
Universalis	0	1

Table 5 shows the dermoscopy findings

Dermoscopy findings	Early onset (<13years)	Late onset)(>13 years
Black dots	13	4
Exclamation Mark hair	12	5
Yellow dots	13	3
Short vellus hair	6	2
Coudability sign	10	3
Broken hairs	7	2

Table 6 shows the nail findings of patients.

Nail findings	Early onset	Late onset
Fine pitting	3	1
Leukonychia	5	2
Transverse ridging	1	1
Longitudinal ridging	1	0
Dystrophic nails	1	0
Shiny nails	3	1

Table 7 shows the positive family history in the patients.

Family history	Early onset	Late onset
Subtotalis	1	0
Ophiasis	1	0

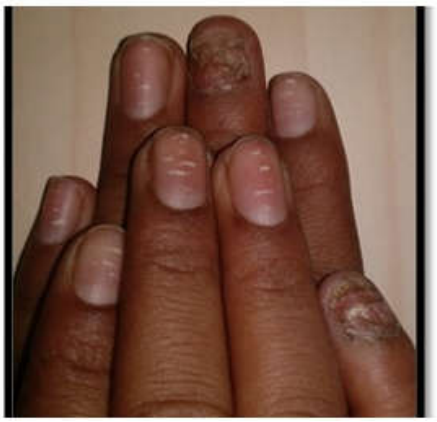

Fig 1 leukonychia, brittle nails and fine pitting.

Fig 2 shows- dermoscopic findings: black dots(black arrow)

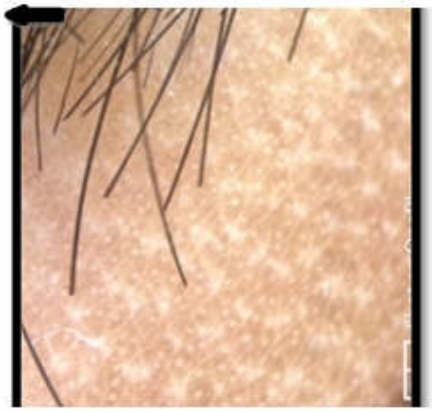

Fig 3 shows yellow dots(black arrow) on dermoscopic examination

Fig 4 shows multiple black dots (black arrow),! Mark hair (white arrow), coudabiity sign (red arrow)

DISCUSSION

The present study comprised of 24 patients of age group 0-16 years. There is no clear conclusion whether the disease varies according to sex but some studies suggests a male predominance[2–3].Alopecia areata can occur at any age. In our study, the youngest patient was 3 year old and the oldest was 16 years and the mean age of the patients was 10.4 years.As shown in Table1, patients with early onset (<13 years) was 18/22, where as late onset Alopecia Areata(>13years) was 6/22. Previous studies on Alopecia areata suggests that the life time risk of extensive alopecia was more with early onset Alopecia Areata[2–3].Family history was positive in 2 (0.08%) patients which was seen in the early onset group as described in table7, in a similar study on Korean patients more patients (2.0%) in the early-onset group had a positive family history[11].

In Table 4, it has been described that 61% (11/18) patients of early onset group in our study had severe forms of AA, results of previous studies shows that if AA develops before puberty, the risk of AT is 50% and in older individuals, the risk is about 25%[12,13].In present study, as shown in table4, 50% of male patients showed severe AA and 66% females had severe forms of AA. In a study by Sharma *et al* it was observed that a significant higher proportion of males (32%) compared to females (17%) develop severe form of Alopecia areata when the onset was before 20 years of age[2].More than usual cases of severe forms of AA were seen in this study as compared to the patch type AA(which is the most common type of AA) because most of the patch type of AA are self resolving and often go undiscovered in females due to their long hair, while some cases of Patch type AA evolve to AA subtotalis or AA totalis. Another explanation to this unusual incidence would be, this study was performed at a tertiary care center where most of the patients appear late in the disease course.

Table 5, shows the dermoscopic findings such as black dots (72%),yellow dots (68%), broken hair(40%) were seen more frequently in early onset group and it was similar to previous studies[14,15].As shown in table3, in early onset group; 2 patients had AD, 2 had Lichen Sclerosis et Atrophicans, 1 patient had hypothyroidism and 1 patient had vitiligo; in a study of 871 Korean patients more patients in the late-onset group(12%) had a medical history thyroid disease and conversely AD(9.2%) was significantly more common in the early-onset group[11].

Nail changes are described in table 6; nail changes were seen in 9/24 (37%) of patients and changes were more common in patients with severe forms of alopecia(6/9; 66.6%) as compared to those with circumscribed AA.The findings were consistent with 808 patients of AA in North India showing 49.7% of severe AA patients with nail changes[2].

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Conflict of Interests: none

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