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Original Article

Pattern and profile of alopecia areata in Pakistan

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Abstract

Objective To assess the clinical features and associations of alopecia areata in Pakistani population.

Patients and methods A cross sectional study was carried out at the dermatology department of Combined Military Hospital Kharian Cantonment during one calendar year. During the study period all patients presenting to the dermatology outpatient with a possible diagnosis of alopecia areata were evaluated. Information regarding age of onset, duration of illness and associated symptoms, was recorded on a pro forma for every patient. Physical examination was done to assess the extent of hair loss, nail changes and associated diseases.

Results Eighty three patients were enrolled during the study period. Sixty (72%) were males and 23 (28%) were females. Mean age of onset was 21.4 years (range 2-50 years). Duration of the illness varied from one week to 12 years. Fifty nine (71%) patients presented with first episode, 16 with second episode and in 8 patients disease was continuous. Sixty one patients (73.6%) had patchy alopecia, 10 (12%) had ophiasis, 8 (9.6%) had reticulate alopecia, while 1 (1.2%) had alopecia totalis, and 2 (2.4%) had alopecia universalis. Nail changes were seen in 17 (20.7%) patients. Personal and family history of atopy was found in 26 (31.3%) patients. A family history of alopecia areata was recorded in 11 (12.1%) patients. Two patients had thyroid disease and one had a family history of vitiligo.

Conclusion Alopecia areata in Pakistani population may have a lower frequency of autoimmune associations. Larger studies are recommended to further validate our results.

Key words
Alopecia areata, clinical features, associations.

Introduction

Alopecia areata is a common disorder of unknown etiology which has an estimated prevalence of 1 in 1000 and accounts for 2% of new dermatological out-patient attendances in Britain and United States and an incidence of 17.2 per 100,000 per year.[1,2,3] There is no known race, sex, or occupational predilection for the development of alopecia areata. Alopecia areata can occur at any age with a mean age of onset of 20 years.[4]

Implicated etiologic factors include patient's genetic constitution, the atopic state, non-specific and organ-specific immune reactions, and emotional stress.[5] The bulk of the current evidence, however, points towards an immune-mediated mechanism.[6] The role of genetic factors in alopecia areata is suggested by occurrence of familial cases, occurrence in twins, and also by HLA studies.[7,8] Reported figure of familial incidence vary from 10% to 50%.[9] The mode of inheritance was thought to be autosomal dominant with variable

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penetrance.[10] There also have been reports of alopecia areata occurring in monozygotic twins, sometimes, with concurrent onset.[11,12]

There is paucity of clinical data in Asians regarding alopecia areata.[13,14] On reviewing the data from Pakistan, we could find only one hospital based study delineating the clinical features in children with alopecia areata.[15] The present study was carried out to assess the clinical features and associations of alopecia areata in all ages in Pakistani patients.

Patients and methods

During one calendar year patients with clinical diagnosis of alopecia areata reporting to the dermatology outdoor of Combined Military Hospital Kharian Cantonment were included in the study. Patients with doubtful diagnosis were excluded. The research and ethics committee of the hospital approved the study. Written informed consent was obtained from the patients or their guardians.

Diagnosis of alopecia areata was made on the basis of the definition of Olsen et al.[16] Patient's detailed history regarding age of onset, duration of illness and associated symptoms, was taken. Personal and/or family history of atopy, alopecia areata and auto-immune disorders, were noted. Physical examination included evaluation of disease extent, presence of exclamation mark hairs, associated nail changes, direct ophthalmoscopy for ocular involvement and whole body examination for associated diseases. Slit lamp examination and opinion of ophthalmologist was taken in patients with suspected ocular involvement. Laboratory tests were done in the light of physical examination where necessary.

Extent of hair loss was classified as scalp involvement <25% (group 1), scalp involvement 25-75% (group 2), and scalp involvement >75% including alopecia totalis and universalis (group 3). During the data collection main site of involvement, pattern, and extent of alopecia were recorded on a pro forma for every patient. The data was later entered into statistical program SPSS version 12.0. Descriptive statistics and frequencies were reported for the desired variables.

Results

Out of the 83 patients studied 60 were males and 23 females. Age of onset varied from 2 to 50 years with a mean age of onset of 21.4 years. Duration of the illness varied from one week to 12 years. Fifty nine (71%) patients presented with first episode, 16 with second episode and in 8 patients, disease had been continuous with regular appearance of fresh patches. Three patients (3.6%) had mild itching in the lesions; disease was asymptomatic in rest of the patients. Scalp was the most common site affected; 64 patients making up to 75% of the total had lesions over scalp, face and eye brows, while in 16 (19%) patients, patches of alopecia were exclusively confined to the face. Different patterns of alopecia areata seen during this study are summarized in Table 1. In 16 patients a combination of patchy, reticulate and ophiasis pattern were seen. One patient with persistent patchy disease had past history of alopecia universalis. Nail changes were seen in 17 (20.7%) patients; longitudinal ridging, fine pitting were the most common findings. Nail roughening and transverse ridging were also seen. No patient had severe nail dystrophy. No case of cataract, lens opacities, and retinal pigment abnormality was seen in this series of patients. Personal and family history of atopy was found in 26 (31.3%) patients. Two patients

Table 1 Age groups, patterns, and extent of alopecia areata. Group I=<25% scalp involvement, group II=25-75% scalp involvement, group III=>75% scalp involvement including alopecia totalis and universalis.

Age groups according to disease onset					
0-10 years	11-20 years	21-30 years	31-40 years	41-50 years	>50 years
N=19	N=10	N=27	N=22	N=4	N=1
Duration of illness					
0-6 months	6-12 months		1-5 Years	>5 Years	
N=47	N=18		N=12	N=6	
Extent of hair loss					
Group I		Group II		Group III	
60 (72.4%)		19 (23%)		4 (4.8%)	
Patterns of alopecia areata					
Patchy	Reticulate	Diffuse	Ophiasis	Alopecia totalis	Alopecia universalis
61 (73.6%)	8 (9.6%)	1 (1.2%)	10 (12%)	1 (1.2%)	2 (2.4%)

had goiter. Both were females, one had endemic goiter and the other had raised serum T3, T4 levels with depressed TSH suggestive of thyrotoxicosis. One patient, an 11-year-old child, had vitiligo. A family history of alopecia areata was recorded in 11 (12.1%) patients. A family history of hypertension in one parent was found in 11 (12.1%) and in both parents in 3 (3.6%).

Discussion

Sex incidence in alopecia areata has been reported as almost equal. This study was done in a military hospital where majority of patients were young soldiers. This could be the reason for small number of female patients (23 females compared with 60 male patients) in this study although in other reported series in Asian patients sex incidence is equal.[13,17,18] Most of our patients were in 20-40 years age groups. Mean age of onset in this series was 21.4 years which is in concordance with previously published reports.[4,13] On the average 20% patients of alopecia areata have been reported to have long term disease.[2] In this study 18 patients (21.6%), however, had duration of disease greater than one year while in six patients it was greater than 5 years.

In this study, personal and family history of atopy was found in 26 (31.3%) patients which is similar to the observation of other researchers.[19] Some have shown up to 60% association of alopecia areata with atopy in Asians.[13] However, no association between presence of atopy and disease severity of alopecia areata has been found.

We found a family history of alopecia areata in 12.1% of our patients. Other report from Pakistan shows somewhat similar figures.[15] Review of literature, however has revealed variable results. Kavak *et al.*[18] have shown a positive family history in 24.1% of their patients. In a Chinese study, incidence of family history was found in 8.4% of patients.[20] Current information suggests a lower incidence of family history in Asians as compared to other races.

Patchy alopecia areata was the most common pattern seen in 61 (73.6%) patients followed by ophiasis in 10 (12%) patients. Ophiasis pattern

was often associated with chronicity of the disease. Two patients in our study had alopecia universalis and one had alopecia totalis making up 3.6% of the total. In a previous study from Pakistan, Ahmed et al have found around 25% of patients with severe disease.[15] Other researchers have shown very high percentage of severe forms of disease.[17] One reason could be the relatively smaller sample size of our study. We believe that to find the true incidence of disease severity, larger, population based studies need to be carried out.

Association of alopecia areata with autoimmune diseases is well established. A study done exclusively for the purpose of finding autoimmunity in children with alopecia areata has found statistically significant association of thyroiditis, as well as family history of other autoimmune diseases.[21] These findings have been shown by many other researchers.[15,17,19] Our results, however, are on the contrary. Only two (2.4%) of our patients had thyroid disease, one with raised serum T3, T4 levels. One reason could be that thyroid function tests were not done as a routine in this study. These were requested on clinical suspicion; thus some sub-clinical cases may have been missed. We also think that larger, multicenter studies should be done in this regard.

Nail changes were observed in 17 (20.7%) patients in this study. Nail involvement in alopecia areata has been variably reported from 7% to 66%.[1] Ahmed *et al*.[15] found nail changes in 35% of their Pakistani patients. Sharma *et al*., from India, have reported 30% chance of having nail changes in their patients.[14] They also found a significant association of nail changes with disease severity. To establish the true association of nail changes with alopecia areata, we suggest, prospective studies investigating the nail changes with the chance of developing alopecia areata. Association of nail changes with disease severity also appears to be a promising line of research.

Alopecia areata is a psychologically debilitating disease for which no cause has yet been found. Disease pathogenesis has been unraveled in the last few decades and polygenic inheritance potential has been suggested. Among various races no large differences are apparent in the clinical features and associations of alopecia areata. In our part of the world not much work has been done on delineating the clinical features and associations of the disease. No population based work has been done as far as we have searched. Further research is needed to better understand the disease process.

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Manuscript Submission

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