ALOPECIA AREATA–A CLINICAL STUDY OF 250 PATIENTS

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Two hundred and fifty patients including 153 males and 97 females with alopecia areata (AA) and 100 age and sex matched controls were studied. Eighty percent patients had the onset before 30 years of age. The alopecia started at younger age in females compared to males. Forty two (16.8%) patients developed alopecia totalis/universalis or extensive alopecia areata. The sites affected were scalp in (83.6%), extremities (36%), beard (20%) and eyebrows (13%). Onset of alopecia was preceded by mild itching in 17(6.8%) patients. The family history of alopecia areata was positive in 26(10.4%) patients, and 61(24.4%) patients had personal and/or family history of atopy. Nail changes were seen in 67(26.8%) patients and twenty five (37.3%) of these had severe forms of alopecia areata. Vitiligo was associated in 6(2.5%) patients compared to 1% in the controls. Family history of hypertension and diabetes mellitus was present in a significant percentage of patients with alopecia areata. The precipitating factors were identified in 44(17.6%) patients.

Key words : Alopecia areata, Clinical features.

Alopecia areata (AA) accounts for 2-3% of all the new out-patient attendance in dermatology services.[1-3] Features of alopecia areata were described 2000 years ago by a Roman encyclopaedist Cornelius Celsus and the term alopecia areata was initially used by Sauvages in 1760 in his Nosolgia medica.[2] The detailed clinical studies in alopecia areata were carried out by Brown (1929)[4] and Sabouraud (1929)[5] and later by Muller and Winkelmann[6] and Ikeda[7] in 1960s. Ikeda in her often quoted study from Kyoto, Japan studied 1989 patients between 1946-1963 and classified alopecia areata into 4 types: common, atopic, prehypertensive and combined or endocrine-autonomic. The results of Ikeda have been confirmed by other workers.[8-10] The subject has been reviewed in detail by Rook and Dawber[2] and Rook.[10] The disorder occurs world-wide and all races are susceptible.[2] Though alopecia areata is fairly commonly seen in India, no published data is available. In the present study clinical features of alopecia areata are reported in 250 patients.

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Materials and Methods

Two hundred and fifty consecutive patients of alopecia areata seen between 1983 and 1985 formed the study group. A detailed history regarding duration, site of onset, progression, precipitating factors, treatment, past and family history of alopecia areata, atopy, diabetes mellitus, hypertension, rheumatoid arthritis, vitiligo and thyroid disorders was recorded. An enquiry into family history included sibs, parents, both maternal and paternal grand parents, uncles, aunts and cousins. A similar history was also recorded in 100 age and sex matched patients attending skin out-patient for scabies, dermatophytosis, keloids, sebaceous cyst, callosities etc. The patients with diseases known to be associated with AA were not included as controls. The sites, pattern and extent of alopecia, associated skin diseases and nail changes were recorded. The findings were classified into, (1) circumscribed, and (2) severe forms. The severe forms included alopecia totalis (AT), alopecia universalis (AU) and extensive alopecia areata (EAA). The term extensive alopecia areata was used to describe multiple patches of alopecia scattered over the scalp, arms, legs and other sites, persisting for more than one

year. All the patients were interviewed, examined and followed closely by one of the authors (VKS).

Results

Alopecia areata accounted for 1.3% of the new out-patient attendance in the study period. Two hundred and fifty patients included 153 males and 97 females with an age range of 10 months to 56 years. Ninety nine (40%) patients were in the 20-29 years age group and 16.8, 16.4, 17.6, 8.0 and 1.6% were in the first, second, fourth, fifth and sixth decades respectively (Table I). Sixty two (24.8%) patients were children below 16 years including 37 girls and 25 boys.

Table I. Age and sex distribution of 250 patients with alopecia areata.

Age group in years	Number (%) of patients		
	Males	Females	Total
0-9	16(10.5)	26(26.8)	42(16.8)
10-19	23(15.0)	18(18.6)	41(16.4)
20-29	72(47.1)	27(27.9)	99(39.6)
30-39	27(17.6)	17(17.6)	44(17.6)
40-49	13(8.5)	7(7.2)	20(8.0)
50-59	2(1.3)	2(2.0)	4(1.6)
Total	153	97	250

Eighty percent of the patients had onset below 30 years of age (Table II). The mean age at onset was 21 years (22.8 years in males and 18.4 years in females). The peak age of onset of alopecia in females was first decade whereas in males it was third decade.

Seventy five (30%) patients had onset in childhood (below 16 years of age). Two thirds children had onset in first decade. The onset of alopecia in childhood was more frequent in females (46.1%) compared to males (19.6%). One third of patients with onset of alopecia areata in the second decade developed severe forms of alopecia (AT, AU or EAA) (Table II).

Table II. Age at onset and severity of alopecia areata.

Age group (Years)	Number (%) of patients with	
	Alopecia areata	Severe alopecia
0-9	51(20.4)	6(11.8)
10-19	53(21.2)	17(32.1)
20-29	96(38.4)	16(16.7)
30-39	32(12.8)	3(9.4)
40-49	14(5.6)	—
50-59	4(1.6)	—
Total	250(100.0)	42(16.8)

The primary patch of alopecia in 186 (74.4%) patients occurred over the scalp, these included 93 (95%) females and 93 (61%) males. The temporal and occipital regions were the common affected sites in both sexes. Beard was the first affected site in 52 (33%) males. Alopecia occasionally started on eyebrows (8), eyelashes (1), trunk (2) and legs (1).

The scalp was involved in 186 (83.6%), extremities in 36 (14.4%), beard in 20 (8%) and eyebrows in 13 (5.2%) patients. The scalp was the only site of alopecia in 142 (56.8%) patients including 74 (76.3%) women and 68 (43.7%) men.

Mild itching preceded the alopecia in 17 (6.8%) patients. Majority (84.3%) of the patients had one patch of alopecia at the onset, 10% had two lesions, and in the remaining 5.7% it started with multiple patches. There was no relationship between the number of patches at the onset and the ultimate severity of alopecia. Most of the patients of AT, AU or extensive alopecia areata had started with 1-3 patches of alopecia.

The duration of alopecia varied from one day to 23 years. Most (70.4%) of the patients had alopecia for less than 6 months, 18.4% had it for 6 months to 3 years, and the remaining 11.2% for more than 3 years. Alopecia of

longer than 3 years duration was frequently of a severe form.

Severe forms of alopecia seen in 43 (16.8%) patients, included 5 with AT, 14 with AU and 24 with EAA. These included 27 males and 16 females. The average age of onset was 26 and 13 years in males and females respectively. History of atopy was found in 8 (18.8%) patients. Alopecia became total or extensive after a mean period of 4 months and universal after a mean period of 11 months. Total or universal forms developed rapidly in children compared to adults.

One or more family members were affected in 26 (10.4%) patients. In 4 patients more than one family member was affected. Family history of alopecia was positive in 8 (18.8%) of 43 patients with severe forms and only in 2 out of 100 controls.

Definite history of atopy i.e. nasal and naso-bronchial allergy, bronchial asthma and atopic dermatitis was obtained in 61 (24.4%) patients. Personal, family and both personal and family history of atopy was recorded in 10%, 10.4% and 4% patients respectively. Atopy was found in 5% of 100 controls.

Nail changes were found in 67 (26.8%) patients and were more often seen in patients with severe disease, 25 (58.1%) out of 43 patients. Severe forms of alopecia areata occurred in twenty five (37.3%) out of 67 patients with nail changes. Nail changes were seen in one patient two years prior to the onset of alopecia universalis. Pitting (20), trachyonychia (18), longitudinal ridging (14), leuconychia (7), shiny nails (6), lustreless nails (4), yellow brown discoloration (3), terminal 'V' nicks (3) and platynychia, koilonychia, pigmented bands, congenital deformity, fissured eponychium, paronychia, suffused nails were seen in one patient each.

Associated skin diseases found in 49 (19.6%) patients, included mostly superficial fungal infections, pyodermas and acne. Vitiligo was observed in 6 (2.4%) patients and in 1% controls. Lichen sclerosis et atrophicus, lichen planus, lichenoid eruption, atopic dermatitis, morphoea, plica neuropathica, psoriasis were associated in one case each. Vitiligo appeared 3 to 6 months after the onset of alopecia at sites away from the site of alopecia and was not extensive.

The associated systemic disorders seen in 29 (11.6%) patients included neuro-psychiatric disorders (11), cardiac diseases (4) and diabetes mellitus, uveitis, sero-negative arthritis and pulmonary tuberculosis (2 each), malabsorption, hypertension, urolithiasis, chronic suppurative otitis media, chronic sinusitis and anemia (1 each).

Family history of hypertension, diabetes mellitus and ischemic heart disease was found in 20.4, 13.2 and 1.6% patients of AA respectively compared to 2%, 4% and 0% in controls.

Precipitating factors found in 35 (14%) patients were financial and job problems (14), febrile episodes (12), death of close relation (3), drugs (3), and malabsorption, sciatica, iritis and spontaneous abortions (1 each).

Exclamation mark hairs or sign of coudability[11] were found in two thirds of patients on edges of fresh or extending lesions. Twenty percent patients with alopecia areata healed with appearance of grey hairs.

Comments

Alopecia areata is a disease of autoimmune aetiology, but genetic factors, hormonal influences, infections and emotional stress have been alleged to play a role in its causation.[1,6] Immunologically, reduction in absolute T-cell numbers, increased T helper suppressor ratio and increased proportion of suppressor cytotoxic cells and reduction in absolute B-cell count have been reported.[12-14] The changes in immune status may be confined to patients with extensive alopecia.[15] Autoantibodies against nuclear

protein, gastric parietal cells, thyroid colloid and cytoplasm, smooth muscle and microsomes have also been reported[16,17] and are more frequent in severe forms of alopecia areata.[15] As the final opinion on immunological changes in AA is yet to emerge, routine immunological investigations are not recommended.

Alopecia areata affects both sexes equally[1,6] though the male : female ratio was 3 : 2 in the present study. Male preponderance was more obvious in 20-29 years age group (M : F : 3:1). Similar findings have been reported by Bastos et al[18] from Portugal.

Alopecia areata may start in the 4th month of life[19] or in late seventies.[6] Our youngest patient was 10 months and the oldest was 56 years old. Eighty percent patients had the onset of alopecia when they were under 30 years of age (Table II) compared to only 43.7% patients from north America.[6]

Severe form of alopecia areata occurred most frequently with onset in the second decade and inverse relationship between incidence of AT/AU and age of onset[6] was not seen.

Positive family history of AA was present in 10% of our patients as also observed by Muller and Winkelmann.[6] Some authors, however, found familial association in upto 27% patients.[12] The association of Down's syndrome and alopecia areata[2] reported earlier was not seen in this study.

Atopy was associated in 24.4% patients compared to 5% controls in our study. The incidence of atopy varied from 10% to 52.4% in other reports.[6,8] Alopecia areata is said to occur early in atopics and is severe.[6,7] No such correlation was found in the present study.

Out of the various nail changes which reportedly occur in 23-33% cases of alopecia areata,[2] pitting is the commonest, seen in 10% patients.[6,16] Our findings were in agreement with the above facts. Leuconychia recently described as a specific change,[20] was found in 7 (2.8%) of our patients but could not be directly correlated with alopecia areata. It seems that nails in alopecia areata initially become lustreless, later rough (trachyonychia) and then definite pitting becomes evident.

Vitiligo was 2.4 times more frequent in patients of AA compared to controls. Vitiligo is associated in 4% patients of alopecia areata[3,6] and conversely 16% patients with vitiligo have AA[21] indicating a strong association between these two diseases. Association with neurodermatitis or dyshidrotic eczema reported by Muller and Winkelmann[6] was not seen in our patients.

Alopecia areata is known to be associated with thyroid diseases, pernicious anemia, Addison's disease and autoimmune testicular disease.[2] There are occasional reports of association with lupus erythematosus, lichen sclerosis, polymyalgia rheumatica and Sjogren syndrome.[2] Muller and Winkelmann[6] found thyroid diseases in 8%, collagen-vascular disorders in 2%, organic nervous diseases in 18% and psychiatric diseases in 12% patients. No significant clinical association with the above-mentioned diseases was found in the present study.

Diabetes mellitus is said to occur more frequently in relatives of patients with alopecia areata.[22] In present series a family history of diabetes mellitus was obtained in 13.2% patients compared to 4% in controls. This association merits further investigation. Family history of hypertension was found in 20.4% patients compared to 2% in controls but only one patient was hypertensive. Severe forms of alopecia were not more frequent in patients with family history of hypertension contrary to Ikeda's findings.[7]

Psychological factors were found to be associated with the onset of alopecia areata in upto 23% patients[6,15] whereas emotional

stress was listed as precipitating factor in the present study in 17 (6.8%) patients only.

Appearance of grey hairs observed in 20% of patients during healing phase may be due to decreased number of melanocytes, melanization and its transport in alopecia areata.[23]

The following differences were found between alopecia areata seen in Western countries and the present study : (1) Alopecia areata occurred at a comparatively younger age. (2) Onset of AA was earlier in females (1st decade) compared to males (3rd decade). (3) The association of atopy with severe alopecia was not seen. (4) Family history of diabetes mellitus and hypertension was frequently associated with alopecia areata. (5) The patients with onset of alopecia in second decade had worse prognosis.

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