



Original Research Article

Epidemiological and clinical characteristics of alopecia areata in a tertiary care center in Western Odisha

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ABSTRACT

Introduction: Alopecia areata is a common autoimmune disease often presenting with patchy areas of hair loss. Personal or family history of atopy and presence of other autoimmune diseases are often associated with this condition.

Objective: The present study was conducted with the objective of finding the epidemiological factors, clinical patterns and associated comorbidities associated with alopecia areata.

Materials and Methods: It was a single centre, hospital based cross sectional study undertaken between the period March 2017 to March 2020. Clinically diagnosed cases of alopecia areata were included in the study. Epidemiological data such as age, gender, locality, educational status and occupation were taken into consideration. Various clinical patterns such as patchy area of hair loss and more severe variants such as alopecia totalis, alopecia universalis etc were noted. The data were obtained through pre-structured questionnaire, findings of clinical examination and laboratory data.

Results: A total of 531 cases of clinically diagnosed alopecia areata were included with an overall prevalence of 4.1%. The mean age at onset was 27.4 ± 12.92 years. Males outnumbered females (1.31:1). Salaried persons (34.08%) belonging to upper socioeconomic status (31.6%) were predominantly affected. Hypothyroidism 29(5.46%) and bronchial asthma 14(2.6%) were the most common comorbidities.

Conclusion: Educated, employed persons in the urban area are more susceptible to develop alopecia areata. Comorbidities like thyroid dysfunction, bronchial asthma and diabetes mellitus must be looked for in all such cases.

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1. Introduction

Alopecia areata (AA) is T cell mediated autoimmune disease resulting in nonscarring alopecia. The incidence of AA is around 2% in both hospital and community based studies.¹ Overall incidence in India varies from 0.7 to 2.1% and usual age of presentation is 20 to 40 years.²

Health related quality of life is poor in majority of patients.³ Multiple etiological factors like genetic,

autoimmune, psychological and viral infections have been suggested in the pathogenesis of this condition. A positive family history of AA is also an important predisposing factor and studies have shown that the lifetime risk of AA is 7.1%, 7.8%, and 5.7% in siblings, parents, and children of patients with AA, respectively.⁴

Atopy as a risk factor presents in around 60% of adults and 25% children with AA who either had personal or family history of atopy.^{4,5}

According to severity, it can be classified as mild (≤ 3 patches), moderate (≥ 3 patches without alopecia totalis or

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universalis), and severe (alopecia totalis, universalis, and ophiasis).⁶

Management of AA includes topical or Intralesional corticosteroids, and systemic immunotherapy is usually considered for diffuse and more severe variants.

Even though AA is commonly seen in daily practice; there is a paucity of data in our population. This study aims to describe the prevalence and clinical characteristics of patients diagnosed with AA at a tertiary care hospital in western Odisha.

2. Materials and Methods

This study was a descriptive cross-sectional study conducted at VIMSAR Burla. It included all patients diagnosed with AA between March 2017 and March 2020. Data were retrospectively collected by reviewing the Outpatient registries. Data included patient demographics, type of AA, family history of AA, and associated comorbidities. Severity of AA was divided into mild/moderate variant with patchy area of hair loss and severe variant including alopecia totalis, universalis, or ophiasis.

Sample size calculation was performed using Raosoft.com with a 5% margin of error and 95% confidence level. Minimum recommended sample size was 197 And we had a total sample size of 531. A convenience sampling technique was used. Descriptive statistics were presented as frequencies and percentages for categorical variables (age categories, gender, types of AA, family history, presence of comorbidities, and autoimmune diseases). Mean \pm standard deviation was used for numerical variables (age at onset and disease duration). Data were analyzed using SPSS statistical software. Study was approved by the Institutional Ethical Committee VIMSAR, Burla.

Out of 531 cases, 16 patients presented as alopecia totalis and 4 as alopecia universalis.

(Percentage means Percentage area of scalp involved)

3. Results

A total of 531 patients with clinically diagnosed AA were included in the present study. During the study period, 12644 new patients were referred to the dermatology OPD. The overall prevalence of AA was calculated to be approximately 4.1%. The mean age at onset was 27.4 ± 12.92 years. A disease onset before the age of 15 years was observed in 28.81% of cases. Males with AA were more than females with a ratio of 1.31: 1. A family history of AA was positive in 25 cases (4.7%) of patients. Upper class people (31.6%), salaried people (34.08%) and Graduates (40.48%) were more commonly affected.

Associated diseases were found in 105(19.7%) patients. Hypothyroidism 29(5.46%) and Bronchial Asthma 14(2.6%) were among the most common comorbidities.

Table 1: Patient characteristics

Characteristics	n(%)
Mean age at onset	27.61 years
Adult	378 (71.18)
Pediatric	153 (28.81)
Gender	
Male	302 (56.87)
Female	229 (43.12)
Educational Status	
Illiterate	46 (8.6)
Primary	98 (18.4)
Secondary	172 (32.39)
Graduate and above	215 (40.48)
Total	531 (100)
Socio Economic Status	
Upper class	168 (31.6)
Upper Middle	154 (29)
Lower Middle	92 (17.3)
Upper lower	64 (12.05)
Lower	53 (9.98)
Occupation	
Student	112 (21.09)
Salaried	181 (34.08)
Business	83 (15.06)
Agriculture	63 (11.8)
Industrial worker	38 (7.9)
Home Maker	54 (10.16)
Residence	
Rural	189 (35.5)
Urban	342 (64.5)

Table 2: Frequency of alopecia areata types

	Adults n(%)	Pediatric n(%)	Overall n(%)
Scalp	176(33.1)	81(15.25)	257(48.39)
Scalp vertex			
Temporal Scalp	31(5.8)	0	31(5.8)
Frontal Scalp	3(0.56)	0	3(0.56)
Occipital Scalp	15(2.82)	9(1.69)	24(4.5)
Eyelashes	3(0.56)	8(1.5)	11(2.07)
Eyebrows	7(1.31)	16(3.01)	23(4.33)
Beard	95(17.89)	0	95(17.89)
Body hair	17(3.20)	4(0.7)	21(2.25)

Atopy was found in 1.69% of patients. Psychiatric comorbidities also found in 1.6 % cases. A positive family history of atopic dermatitis was most common and found in 18.4% of cases which was followed by hypothyroidism (13.3%) cases, and chronic idiopathic urticaria (12.6%) cases. Nail changes was found in (14.68%) cases with pitting was the most common nail finding among nail changes.

Table 3: Family history of alopecia areata patients

	No of Patients	N(%)
Family History of Alopecia areata	25	4.7
Family History of autoimmune diseases		
Hypertension	51	9.6
Hypothyroidism	71	13.3
Vitiligo	48	9
Chronic idiopathic urticaria	67	12.6
Atopic dermatitis	98	18.4

Table 4: Nail changes

Type of Nail changes	No of Patients	Percentage
Pitting	37	6.96
Twenty Nail dystrophy	23	4.33
Longitudinal Ridging	11	2.07
Dystrophy	7	1.31
Total	78	14.68

Table 5: Clinical types and severity as per area of alopecia areata of scalp table⁷

Clinical Types	No of patients	Percentage
Ophiasis	7	1.31
Sisapho	18	3.38
<50%	511	96.23
50-99%	4	0.7
100	16	3.01

Table 6: The association of comorbidities with severity in alopecia areata patients

Comorbidities	Mild to moderate	Severe	Total	
Systemic	Hypothyroidism	29	4	33
	Rheumatoid arthritis	12	0	12
	Bronchial asthma	14	1	15
	Diabetes mellitus	8	2	10
	Hypertension	4	1	5
Cutaneous	Atopic Dermatitis	7	2	9
	Psoriasis	4	0	4
	Vitiligo	7	1	8
	Total	93	12	105

4. Discussion

AA is a common disorder associated with significant social stigma. However, studies on its epidemiological and clinical characteristics are limited in western Odisha. Prevalence of AA in our study was 4.1% which is comparable to other studies conducted worldwide.^{8–11} Countries like the United States and Japan have reported prevalence of 3.2% and 3.45% respectively.^{8,11} Children and young adults are more commonly affected by this condition though it can affect people of any age group (1.21–2.58% vs 1.30–2.03%).⁹

The mean age of onset of AA was 27.4 years in our study. This finding has also been shared by various studies conducted across the world where the range has varied between 25.2 to 36.3 years.¹ There was a definite male preponderance among the cases of alopecia areata observed in our study with a male to female ratio of 1.31:1. However, both male and female preponderance and even an equal gender distribution has been found by workers in different countries.¹² In our study AA was more common in patients with higher socioeconomic status, graduates and among salaried persons.

As far as clinical presentation was concerned, patchy hair loss over the scalp was the most common one in our study and most of the clinical studies on alopecia areata have reported a similar pattern.¹

Nail changes in form of pitting, twenty nail dystrophy, ridging, also found in 14.68 % of patients similar to studies reported earlier.²

AA is usually associated with various atopic and autoimmune diseases.^{12–14} In our study bronchial asthma, hypothyroidism, rheumatoid arthritis are most commonly reported comorbidities. We could find a similar association in few studies where hypothyroidism and rheumatoid arthritis, SLE were the predominant comorbidities seen in patients of alopecia areata.^{14–16}

Our study has several limitations. We have conducted a retrospective data review as the main source for data collection and also our study had a relatively small sample size.¹⁷

5. Conclusion

AA is a commonly encountered entity in the Dermatology OPD. However, the paucity of data regarding the epidemiological and clinical patterns should necessitate more number of such studies with a larger sample size. Educated, employed persons in the urban area are more susceptible to develop this condition which could be related to the stress involved in their personal and professional life. Proper counselling must be a part of the treatment protocol along with specific pharmacological therapy. Patients with this seemingly mild condition often suffer from various comorbid conditions like hypothyroidism, bronchial asthma and diabetes mellitus. Therefore, all patients of AA should

be thoroughly examined to look for other comorbidities so as to reduce preventable complications in the future.

6. Conflicts of Interests

No conflicts of interests were disclosed.

7. Source of Funding

None.

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