ORIGINAL ARTICLE

A Clinico-epidemiological Profile of Patients with Alopecia Areata: A Hospital-Based Cross-Sectional Study

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Article History:
Received date: July 20, 2025
Revised date: August 04, 2025
Accepted date: August 10, 2025
Published date: August 28, 2025

Online Access

DOI:10.64772/mjapfn1114

Abstract

Introduction: Alopecia areata is one of the common types of non-cicatricial alopecia. It is considered an autoimmune disorder and effects hair bearing areas like scalp, eyebrows and beard. It also carries psychological burden. This study aimed to evaluate clinico-epidemiological profile of patients diagnosed with alopecia areata attending the dermatology outpatient department of a tertiary care center.

Methods: A cross-sectional study was conducted from 1st Jan 2025 to 30th June 2025. after clearance from Institutional Review Committee (Reference number: NAPFH-033/2024) of the hospital. Data on patient demographics, clinical diagnosis and examination findings were collected on preformed proforma and entered in Statistical Package for the Social Sciences version 21. Descriptive statistics were used for analyses.

Results: In our study, 52 cases were diagnosed with alopecia areata during the study period, out of which 40 (76.93%) were males and 12 (23.07%) were females with male to female ratio of 3.3:1. The majority of patients belonged to the 31–40 years age group, accounting for 24 (46.20%) cases. Most patients, 46 (88.50%), were asymptomatic, and the duration of the disease was less than 3 months in 43 (82.70%) cases. The scalp was the most commonly involved site in 42 (80.80%) cases, and patchy alopecia was the predominant pattern observed in 43 (82.70%) cases. Nail changes were present in 11 (21.20%) cases.

Conclusions: In our study, Alopecia areata was more common in males. Scalp was predominantly involved site and patchy hair loss was the most common pattern observed. Early recognition, treatment and screening for other associated diseases is required for proper management of this condition.

Keywords: *alopecia areata; autoimmune disorder; Nepal.*

Introduction

Alopecia areata (AA) is an immune-mediated, non-cicatricial form of hair loss. It involves hair-bearing areas like scalp, eyebrows and beard. It can present as small patches of hair loss to generalized loss of hairs on the body.[1,2] The estimated lifetime risk in the general population is 2%.[3,4] The global prevalence rate of AA varies and is around 0.1%-3.8%.[5-7] A study conducted in mid-western Nepal reported that alopecia areata accounted for 4.74% of dermatology outpatient department (OPD) cases.[8]

Although the exact etiology of Alopecia areata is not fully understood, autoimmune mechanisms are

How to cite (Vancouver Style)

Maharjan R, Karki A. A Clinico-epidemiological Profile of Patients with Alopecia Areata: A Hospital-Based Cross-Sectional Study. Med J APF Nepal. 2025;1(1):55-59.

strongly implicated. AA involves immune-pathogenic mechanisms involving autoreactive T lymphocytes, cytokine dysregulation, and genetic susceptibility.[8,9] Patient with AA is often associated with other autoimmune conditions such as thyroid disorders, type 1 diabetes, vitiligo, and lichen planus, indicating a common underlying immune dysregulation.[1,10] AA may improve spontaneously, but often experiences frequent episodes of hair loss and requires treatment. It also carries a significant psychological burden. As a result, patients may have stress, low confidence, anxiety, and affect their quality of life.[1]

In Nepal, there is limited epidemiological data of patients with alopecia areata. The knowledge of demographic characteristics, patterns, frequencies, and types of AA in patients can help fill an important knowledge gap in the Nepalese tertiary care setting. It can help to enhance clinical practice and comprehensive management of the condition. Furthermore, this study could serve as a baseline for future research in Nepal and contribute to developing region-specific guidelines for autoimmune skin disorders.

Methods

This hospital-based cross-sectional study was conducted at the dermatology outpatient department of Nepal Armed Police Force Hospital over a period of six months, from 1st Jan 2025 to 30th June 2025. The study aimed to evaluate the clinical and epidemiological characteristics of patients diagnosed with alopecia areata (AA). Ethical clearance was taken from institutional review committee (Reference number: NAPFH-033/2024) prior to the study. Informed consent was taken from all participants. In the case of minors, informed consent was taken from parents or legal guardians. Additionally, assent was taken from cases who were 7-17 years old to ensure their voluntary participation.

All the cases who visited the dermatology OPD and were diagnosed age AA during the study priod were included. Other cases of hair loss, like scarring hair loss, trichotillomania, and fungal infections, were excluded. Diagnosis of AA was made by a qualified dermatologist based on a thorough clinical history and physical examination. While most diagnoses were made clinically, additional diagnostic tools such as dermoscopy and scalp biopsy were employed when necessary to confirm uncertain cases. The data, including patient demographics and examination findings, were collected in preformed proforma and entered in Statistical Package for the Social Sciences version 21. Descriptive statistical methods were applied. In case of continuous variables, the mean and standard deviation were calculated. Frequencies and proportions were computed for categorical variables.

Results

Among 52 patients diagnosed with Alopecia areata, 40 (76.93%) were males and 12 (23.07%) were females, with a male-to-female ratio of 3.3:1. The youngest patient was 9 years old and the oldest was 68 years old, with a mean age of 33.38±11.18 years. The largest proportion of patients, 24 (46.15%), belonged to the 31–40 years age group, followed by 12 (23.10%) cases in the 21–30 years age group, as presented in Table 1.

Table 1: Age and sex wise distribution of patients with alopecia areata (n=52).

Age in years	Male(%)	Female(%)	Total(%)
<10	-	1(8.33)	1 (1.92)
11-20	1(2.50)	4(33.34)	5 (9.61)
21-30	9(22.50)	3(25)	12(23.10)
31-40	21(52.50)	3(25)	24(46.15)
41-50	7(17.50)	1(8.33)	8 (15.38)
51-60	1(2.50)	-	1(1.92)
>60	1(2.50)	-	1(1.92)
Total	40(100)	12(100)	52 (100)

In our study, the majority of patients, 46 (88.46%), were asymptomatic, while 5 (9.62%) reported mild itching, and only 1 patient (1.92%) experienced a mild burning sensation over the lesions. Most patients, 42 (82.70%), had a disease duration of less than three months, followed by 5 (9.60%) cases with duration exceeding six months, and 4 (7.70%) cases with a duration of 4–6 months.

The scalp was the most frequently affected site, involved in 42 (80.76%) cases, followed by the beard in 8 (15.38%) cases, and the body and eyebrows each in 1 (1.92%) case. Patchy hair loss was the predominant pattern, observed in 43 (82.70%) cases, with alopecia totalis and ophiasis seen in 3 (5.77%) and 2 (3.85%) cases respectively (Table 2).

Among the 52 cases, 4 (7.69%) had thyroid dysfunction, 2 (3.84%) had a history of atopy, 2 (3.84%) had diabetes mellitus, 1 (1.92%) had vitiligo, and 1 (1.92%) had hypertension. The remaining 42 (80.79%) cases had no associated dermatological or systemic conditions. Nail changes were observed in 11 (21.15%) cases, including pitting in 8 (15.38%), thinning of the nail plate in 2 (3.84%), and Beau's lines in 1 (1.92%) case.

Table 2: Patterns of alopecia areata (n=52).

Pattern of Alopecia areata	Frequency (n)	Percentage (%)
Patchy		
Single	22	42.30
Multiple	21	40.40
Diffuse	1	1.92
Reticulate	1	1.92
Ophiasis	2	3.85
Sisaipho	1	1.92
Alopecia totalis	3	5.77
Alopecia universalis	1	1.92
Total	52	100

Discussion

Alopecia areata is a non-cicatricial form of hair loss which involves hair-bearing areas of the body like the scalp, beard, eyebrow etc. The exact mechanism of action is not known yet, however autoimmune mechanism is thought to be a cause. This condition can cause psychological impact and affect the quality of life of the patient.[1]

Among patients visiting the dermatology OPD, a total of 52 cases diagnosed with alopecia areata were enrolled during the study period. In our study, the majority, 40(76.90%), were males, and this finding was similar to other hospital-based studies.[2,11,12] However, it contrasts with a hospital-based study done by Guttikonda et al, who reported alopecia areata more in females.[13] Also, population-based studies from the United Kingdom and the United States have shown a higher prevalence of AA in females.[7,14] This discrepancy in our study might be due to differences in health care seeking behaviors influenced by sociocultural factors. Also, it may be attributed to study setting bias where a larger number of male patients visit the OPD.

The age distribution in our study showed a higher prevalence of AA among individuals in the third and fourth decades of life. 24 (46.15%) cases were observed in the 31-40 years age group, followed by 12 (23.10%) in the 21-30 age group. These findings are similar to previous studies in which these two groups were the most common age groups involved.[2,6] This is also in support of the literature that AA is more prevalent in the second and fourth decades of life.[15] People in these decades of life are more exposed to stress due to career, family, and other psychological stress. Stress is a well-documented factor in triggering autoimmune diseases, including AA, and contributes to immune dysregulation.[1] Regarding symptomatology, 46 (88.46%) patients were asymptomatic at the time of presentation, which comprised the majority of the cases. Meanwhile, a few reported mild itching or a burning sensation. These findings are consistent with those of previous studies.[2,11] These minor symptoms could be attributed to the psychological impact of alopecia areata on affected individuals. Additionally, the majority of patients, 42 (82.70%), had a disease duration of less than three months, which aligns with findings from other studies.[11,16] This may be explained by the early visibility of scalp lesions and the emotional distress associated with hair loss. Additionally, the availability of dermatological services at tertiary care centers may facilitate early diagnosis and intervention.

Regarding the distribution of AA, the scalp was the most frequently affected site, involved in 42 (80.76%) cases, followed by the beard in 8 (15.38%), and the body and eyebrows in 1 (1.92%) case each. This pattern is consistent with epidemiological data indicating that the scalp is the most commonly involved area in alopecia areata, followed by other regions.[7,10,15] Patchy hair loss was the predominant clinical pattern, observed in 43 (82.70%) cases, which aligns with findings from several other studies.[12,13,17] Only a few cases of more severe forms, such as alopecia totalis (AT) and alopecia universalis (AU), were noted, supporting existing evidence that these forms are relatively rare.[7,15] This low number of severe cases may be attributed to the early presentation of patients to healthcare facilities, driven by the visible cosmetic impact and psychological distress associated with hair loss.[1]

In our study, 42 (80.79%) patients had no associated systemic or dermatological conditions. Thyroid dysfunction was observed in 4 (7.69%) cases, a history of atopy in 2 (3.84%), and vitiligo in 1 (1.92%) case. Additionally, systemic illnesses such as hypertension and diabetes mellitus were present in 1 (1.92%) and 2 (3.84%) cases, respectively. Autoimmune conditions like thyroid disorders, vitiligo, and atopy have been reported as common associations with alopecia areata in various studies.[2,18,19] However, hospital-based studies conducted in western Nepal did not find a significant association between these conditions and AA.[10,20]

Nail changes are common signs seen in cases of AA and are the cause for cosmetic concern and functional impairment. These are mostly seen in severe cases of AA like alopecia totalis, alopecia universalis etc. Pitting, trachyonychia, onycholysis, leuchonychia are some nail changes seen in AA, among which nail pitting is mostly common. These nail changes are due to shared autoimmune mechanism which target the nail matrix keratinocytes leading to disruption in keratinization and nail growth. In our study, nail changes were seen in 11 (21.15%) cases among which pitting was the most common findings and seen in 8 (15.38 %) cases similar to other studies.[11,21]

Conclusions

Alopecia areata was common among males and in second and third decades of life in our study. Scalp was most common site and patchy alopecia was most frequent pattern observed. Nail pitting was most common nail findings. Early recognition, treatment and screening for associated diseases is required for proper management of alopecia areata.

Source of Funding: None

Acknowledgement

We would like to acknowledge staff of Dermatology OPD of Nepal APF hospital for assisting with record keeping and data collection.

Conflict of Interest: None

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