Original Research Article

Study to examine correlation between lifetime prevalence of traumatic events and alopecia areata

Omkar Shivanand Kulkarni [1,*], Anirudha Dharnidhar Gulanikar [1]

[1]Dept. of Dermatology, MGM Medical College and Hospital, Aurangabad, Maharashtra, India

A B S T R A C T

Background: Alopecia areata is commonly occurring autoimmune hair condition presenting as well demarcated patches of hair loss. Majority of existing literature examines relation of acute stressful events to onset of alopecia areata. We examined correlation of lifetime prevalence of traumatic events to occurrence of alopecia areata.

Materials and Methods: Structured questionnaire called presumptive lifetime stressful event score was administered to clinically diagnosed cases of alopecia areata visiting tertiary care centre.

Results: Financial traumatic events were statistically more significantly associated with male sex (p value of 0.04884). Educational traumatic events were more common in younger age group i.e., <30 years of age (p value 0.00044). Familial traumatic events (p value 0.03846) as well as lifestyle changes (p value 0.04338) were more common in >30 years. It was observed that majority of category shows educational stress (24%), followed by financial stress. (22%).12 patients of 50 (24%) had recurrent disease with mean disease duration of 12 months and average number of traumatic events to be 1.41 while those with single episode (N=38) had average disease duration to be 5.94 months and experienced mean 1.36 traumatic events

For reprints contact: reprint@ipinnovative.com

1. Introduction

Alopecia Areata is one of most common autoimmune disease which affects approximately 1%-2% population at least once in lifetime.[1] As per current understanding, it is considered an autoimmune skin condition with contribution from genetic factors, environmental factors and psychological stress.

Even after many studies relating stress factors with occurrence of alopecia areata, the association remain equivocal. Some studies found more stressful life events occurring prior to Alopecia areata episode, whereas other researchers have not found any differences.[2] It is now understood that a complex neuro-immuno-cutaneous network between the brain and the skin that may act as local stress response system in its own right, which may be considered a peripheral equivalent of the hypothalamic-pituitary-adrenal axis.[3]

Majority of available research on correlation of psychiatric elements and onset of Alopecia Areata is focused on acute events triggering alopecia areata rather than lifetime prevalence of traumatic and emotionally demanding events. Association between lifetime prevalence of traumatic events and Alopecia areata will help shed a light on etiopathogenesis of alopecia areata.

Therefore, the present study was conducted to study correlation between lifetime prevalence of traumatic events and Alopecia Areata.

* *Corresponding author.*
E-mail address: omkarderma@gmail.com (O. S. Kulkarni).

2. Materials and Methods

This was prospective cross-sectional descriptive study conducted to evaluate lifetime prevalence of traumatic events in alopecia areata. It was conducted in Department of dermatology, venereology and leprosy of MGM medical college and hospital, Aurangabad, from March 2020 to October 2021.

2.1. Inclusion criteria

All adult patients with clinically diagnosed Alopecia Areata

2.2. Exclusion criteria

1. Patients not agreeing to sign consent to be included in study.
2. Patients reluctant to answer questionnaire.

Each patient after obtaining informed consent and basic demographic data, was clinically assessed in detail along with SALT scoring and was then administered presumptive lifetime stressful event scale in their local language. Information regarding traumatic events was recorded in terms of either yes or no along with time of the traumatic event happening.

3. Results

Total 50 patients of clinically diagnosed alopecia areata were recruited in the study. The majority of patients were in age group 21-30 years (52%) followed by age group 31-40 years (22%). The mean age of total patients was 29.54 ±9.16 years. Out of 50 patients 66% were males and 34% females. The male to female ratio was 1.94:1.

The majority of patients were illness <6 months (56%) followed by 6-12 months (18%). The mean age of total patients was 29.54 ±9.16 years.

Out of 50 patients 24% having Previous history of alopecia areata, 36% had history of previous treatment taken. Only 2% patients had history of autoimmune disease.

The majority of patients were in Grade 1(92%) followed by Grade 2(4%) and Grade 3(4%).

The majority of patients were with 2 traumatic events (32%) followed by at least one traumatic event (24%)

Financial traumatic events were statistically more significantly associated with male sex (p value of 0.04884). Educational traumatic events were more common in younger age group i.e., <30 years of age (p value 0.00044) while familial traumatic events (p value 0.03846) as well as lifestyle changes (p value 0.04338) were more common in >30 years.

It was observed that SALT grading shows significant association with traumatic events in the patients. (P<0.05)

It was observed that majority of category shows educational traumatic events (24%), followed by financial ones. (22%)

4. Discussion

Alopecia areata is a disorder of unifocal, multifocal or universal, well circumscribed, non-scarring hair loss of scalp as well as bodily hairs. It may be of acute onset and run a relapsing remitting course. It occurs commonly in young adults and in majority of patients shows limited involvement.[4]

Relation of psychological stress, traumatic events and in general the psychological aspect of disease of alopecia areata has been explored in fields of dermatology and psychiatry in various studies. Traumatic events are life changing events or events of significance that can in various fields of life such as personal, family, financial, occupational etc.

In the present study, the majority of patients were in age group 21-30 years (52%) followed by age group 31-40 years (22%). The mean age of total patients was 29.54 ±9.16 years. (Table 1) Similar age characteristics of mean age 30.28±7.66 years were found by Ramin Taheri et al studied triggering Role of Stressful Life Events in Patients with Alopecia Areata.[5]

In our study population, out of 50 patients 66% were males and 34% females. The male to female ratio was 1.94:1. Similar sex distribution of male preponderance with 66% (14 out of total of 21) was reported by Picardi et al who studied role of psychosomatic factors in new onset alopecia areata. 65% (34 out of 52 patients) of study population of Güleç et al were males.[6]

In our study majority of patients were having duration of illness <6 months (56%) followed by 6-12 months (18%) with mean duration of disease to be 8.84 ±5.55 months. The mean age of onset of disease was 29.54 ±9.16 years. Aysha A. Alshahrani et al, reported mean age of 25.61 years. She however observed mean disease duration at the time of presentation was 2 months.[7]

Total of 36 (72%) patients reported at least one traumatic event. (Table 1) The majority of patients were with 2 traumatic events (32%) followed by at least one traumatic event (24%). When relation of demographic factors and traumatic events was examined it was observed that age, sex, marital status and occupation shows no association with presence or absence of stress factors in the patients. (P>0.05)

We categorized patients in groups of male and female, age less or more than 30 years and analysed each category of traumatic event separately (Table 2). Financial traumatic events were statistically more significantly associated with male sex (p value of 0.04884). Educational traumatic events were more common in younger age group i.e., <30 years of age (p value 0.00044) while familial traumatic events (p value 0.03846) as well as lifestyle changes (p value 0.04338) were more common in >30 years.

Willemsen et al[8] has shown in significant number of patients (86%), there was at least one lifetime traumatic

Table 1: Distribution according to traumatic events

Stress factors		No. of Patients	Percentage
No. of traumatic events	0	14	28.00
	1	12	24.00
	2	16	32.00
	≥3	08	16.00
Total		50	100

Table 2: Correlation of age and sex with various categories of traumatic events

Category of traumatic events	Age <30 years (N=28)	Age >30 years (N=22)	P value	Male (N=33)	Female (N=17)	P value
Child issues	2	6	0.0536	5	3	0.8181
Educational problems	12	0	0.00044(S)	8	4	0.95216
Family problems	1	5	0.03846(S)	3	3	0.37886
Financial problems	4	7	0.13622	10	1	0.04884(S)
Loss of significant one	6	4	0.77948	4	6	0.05238
Lifestyle change	0	3	0.04338(S)	1	2	0.2187
Occupational problems	2	2	0.80258	4	0	0.13362

Table 3: Relation of SALT grading and traumatic events

SALT Grading		Traumatic Events		P value
		Present	Absent	
Grading	1	35	11	
	2	00	02	0.01 (S)
	3	01	01	
Total		36	14	

Table 4: Relation with various categories of traumatic events

Category of traumatic events	Positive responses (%)	Negative responses
Child issues	8 (16)	42 (84)
Educational problems	12 (24)	38 (76)
Family problems	6 (12)	44 (88)
Financial problems	11 (22)	39 (78)
Loss of significant one	10 (20)	40 (80)
Lifestyle change	3 (06)	47 (94)
Occupational problems	4 (08)	46 (92)

event or history of childhood trauma which is similar to our study which reports 72% patients report at least one traumatic event. Güleç et al examined psychological factors in alopecia areata using three devices - life event scale distress score, life event scale adjustment score and total number of life events. They found that alopecia areata was significantly associated with total number of life events.[6] Brajac et al in 2003[9] found that there was tendency toward statistically significance association of traumatic events with recurrent disease and especially a greater number of stressful events were associated with recurrent disease. Our study corroborates this finding of higher number of traumatic events in alopecia areata patients (72%). Perrini et al[10] reports at least one traumatic life event was present in 87.5% of alopecia areata patients in his study with statistically significant association with exits of important

persons from life, undesirable events, uncontrollable events. Manolache et al[11] reported that at least one traumatic event occurred in majority of study subjects (77.4%) which is similar to our findings

In our study we elicited history regarding current or past psychiatric disorders or medications, no patients in our study had any such history. Colon et al[12] however reported 74% patients had at least one psychiatric diagnosis throughout lifetime, commonest being generalised anxiety disorder and major depression present in 39% each. The discrepancy can be explained from sampling bias in this study which was carried out in psychiatry institute in Minnesota however our study was conducted in dermatology consulting set up.

Our study is unique in that instead of using western scales and questionnaires which may be less suitable for

Indian population, we used PSLES (Presumptive Stressful Life Event Scale)[13] which is Indian adaptation of Paykel's scale. Not only does it help in assessing traumatic events that are unique to Indian population, it also ascribes a score to each traumatic life event. Upon review of literature, we could not find any study that has utilized this Indian scale of traumatic life events i.e., PSLES to examine traumatic events in alopecia areata patients.

5. Conclusion

Alopecia areata is strongly related to prevalence of traumatic events throughout lifetime. There is statistically significant correlation between severity of alopecia areata and occurrence of traumatic events in life. Those with longer duration of disease tend to have recurrent disease but recurrence is not associated with a greater number of traumatic life events.

This association of lifetime prevalence of traumatic events and alopecia areata points toward triggering role of stressful life events in alopecia areata.

This study was limited by a smaller number of patients and multicentric trials would derive more significant result.

6. Conflict of Interest

The authors declare that there is no conflict of interest.

7. Source of Funding

None.

References

1. Fricke AC, Miteva M. Epidemiology and burden of alopecia areata: a systematic review. *Clin Cosmet Investig Dermatol*. 2015;8:397–403. doi:10.2147/CCID.S53985.
2. Picardi A, Abeni D. Stressful life events and skin diseases: disentangling evidence from myth. *Psychother Psychosom*. 2001;70(3):118–36. doi:10.1159/000056237.
3. Arck PC, Slominski A, Theoharides TC, Peters EM, Paus R. Neuroimmunology of stress: skin takes center stage. *J Invest Dermatol*. 2006;126(8):1697–704. doi:10.1038/sj.jid.5700104.
4. Messenger AG, Mckillop J, Farrant P, Mcdonagh AJ, Sladden M. British Association of Dermatologists' guidelines for the management of Alopecia areata 2012. *Br J Dermatol*. 2012;166(5):916–26.
5. Taheri R, Behnam B, Tousi JA, Azizzade M, Sheikhvatan MRM. Triggering role of stressful life events in patients with alopecia areata. *Acta Dermatovenerol Croat*. 2012;20(4):246–50.
6. Güleç AT, Tanrıverdi N, Dürü Ç, Saray Y, Akçalı C. The role of psychological factors in alopecia areata and the impact of the disease on the quality of life. *Int J Dermatol*. 2004;43(5):352–6.
7. Alshahrani AA, Al-Tuwaijri R, Abuoliat ZA, Alyabsi M, Aljasser MI, Alkhodair R, et al. Prevalence and clinical characteristics of alopecia areata at a tertiary care center in Saudi Arabia. *Dermatol Res Pract*. 2020;doi:10.1155/2020/7194270.
8. Willemsen R, Vanderlinden J, Roseeuw D, Haentjens P. Increased history of childhood and lifetime traumatic events among adults with alopecia areata. *J Am Acad Dermatol*. 2009;60(3):388–93.
9. Brajac I, Tkalčić M, Dragojević DM, Gruber F. Roles of stress, stress perception and trait-anxiety in the onset and course of alopecia areata. *J Dermatol*. 2003;30(12):871–8.
10. Perini GI, Fornasa CV, Cipriani R, Bettin A, Zecchino F, Peserico A, et al. Life events and alopecia areata. *Psychother Psychosom*. 1984;41(1):48–52.
11. Manolache L, Benea V. Stress in patients with alopecia areata and vitiligo. *J Eur Acad Dermatol Venereol*. 2007;21(7):921–8. doi:10.1111/j.1468-3083.2006.02106.x.
12. Colon EA, Popkin MK, Callies AL, Dessert NJ, Hordinsky MK. Lifetime prevalence of psychiatric disorders in patients with alopecia areata. *Compr Psychiatry*. 1991;32(3):245–51. doi:10.1016/0010-440x(91)90045-e.
13. Singh G, Kaur D, Kaur H. Presumptive stressful life events scale (PSLES)—a new stressful life events scale for use in India. *Indian J Psychiatry*. 1984;26(2):107.

Author biography

Omkar Shivanand Kulkarni, Junior Resident ⓘD https://orcid.org/0000-0001-7066-9808

Anirudha Dharnidhar Gulanikar, Associate Professor ⓘD https://orcid.org/0000-0003-3943-5899