Role of family history in patchy alopecia areata

Sophie Wang[1] BS, Rubina Ratnaparkhi[1] MD, Melissa Piliang[2] MD, Wilma F Bergfeld[2] MD

Affiliations: [1]Case Western Reserve University School of Medicine, Cleveland, Ohio, USA, [2]Department of Dermatology, Cleveland Clinic Foundation, Cleveland, Ohio, USA

Corresponding Author: Sophie Wang, B.S., Cleveland Clinic Foundation, Department of Dermatology, Dermatology and Plastic Surgery Institute, 9500 Euclid Avenue, A61, Cleveland, OH 44195, Phone: (908) 531-2220, Email: sxw628@case.edu

Abstract

Background: Family history of alopecia areata has been associated with more severe clinical presentations, but its specific prognostic implications in patchy alopecia remains unclear.

Objective: To evaluate the relationship of family history of alopecia areata with demographics, triggers, comorbidities, disease course, and relapse rate in patchy alopecia.

Methods: The medical records of 256 patients seen over a 17-year period was examined. Data collected included demographics, comorbidities, disease severity, and response to treatment. Comparisons were drawn using Pearson chi-square tests, Fisher exact tests, Wilcoxon rank sum tests, and t-tests as appropriate.

Results: Family history of alopecia areata was associated with reduced hair regrowth after relapses, more severe symptoms, and earlier age of onset. Stress/fatigue, illnesses, thyroid disorders, and season changes were the most common relapse triggers. Dermatologic disorders were the most common comorbidities, followed by atopy and autoimmune disease.

Limitations: Given the retrospective nature of data collection, most measures have some missing data, which may impact findings.

Conclusion: Patchy alopecia patients with a family history of alopecia areata experienced worse outcomes. Concomitant autoimmunity may also adversely affect alopecia areata disease course. Identification of a positive family history of alopecia areata and control of autoimmune comorbidities may aid alopecia areata management.

Keywords: alopecia areata, patchy alopecia, family history, hair loss, triggers, comorbidities, autoimmune, age of onset, regrowth, relapse

Introduction

Patchy alopecia is a clinical subtype of alopecia areata characterized by loss of hair in one or more round areas of the scalp [1]. Prior to this study, there has been no study examining the specific implications of family history on the clinical progression of patchy alopecia beyond reporting its prevalence. patchy alopecia, the most prominent subtype of alopecia areata, has been rarely studied alone. The objective of this study was to evaluate the role of family history in alopecia areata, which relates to the concerns of many patients with alopecia areata since it will help define how their children will fare in the future.

Methods

An IRB-approved retrospective analysis was performed for the medical records of 256 alopecia areata patients seen at the Cleveland Clinic from 2000-2016. Patients were classified by alopecia areata subtype, with patients designated as patchy alopecia based on documented clinical assessment by hair specialist dermatologists: patients exhibit 50% or less of scalp hair loss in a pattern of well-delineated patches at initial presentation. The following data were collected: (1) patient demographics; (2) etiology and differential diagnosis; (3) patient comorbidities; (4) disease severity and clinical presentation; (5) family history of

alopecia areata, hair loss, and autoimmunity; (6) past medical history; (7) disease course and response to treatments; and (8) laboratory values. Analyses were performed using SAS software (SAS Institute Inc.; version 9.4; Cary, NC) assuming a 0.05 significance level.

Results

We report that 18% of patchy alopecia patients have a known family history of alopecia areata. Furthermore, there exists a relatively high prevalence of a family history of other hair loss disorders (i.e. androgenetic alopecia, telogen effluvium), as family history of alopecia areata represents only 43.8% of patients with a family history of hair loss. Our study reports a similar rate compared to prior studies documenting 10%-25% of alopecia areata patients having a positive family history [1]. The average age of onset for patients with a family history of alopecia areata was 25.6±17.9 years and the average age of onset for patients without a family history of alopecia areata was 30.4±19.5 years (P=0.13). From the patient's perspective, stress was the most common trigger among patchy alopecia patients (34.8%), followed by illnesses (9.4%) and thyroid abnormalities (3.9%). Common comorbid conditions include dermatologic disorders (57%), atopy (44.5%) and autoimmune diseases (i.e. psoriasis, Hashimoto thyroiditis, vitiligo, and others), (43.8%), which have been reported previously [2].

Disease severity was classified as mild (0-25%), moderate (26-50%), severe (51-75%), or very severe (76-100%) based on the patient's most severe presentation in the course of disease. Most patchy alopecia patients demonstrated moderate severity, followed by severe, mild, and very severe symptoms. Patients with a family history of alopecia areata more commonly had more severe disease than patients without a family history of alopecia areata.

We note that though family history of alopecia areata played no significant role in rate and degree of relapse and initial regrowth, it is associated with a decreased rate of regrowth once relapse occurs (89% versus. 99%; P=0.036), (**Figure 1**). This finding is important to note as 139 (82.7%) patchy alopecia patients experienced one or more episodes of relapse. In our analysis, we attempted to stratify patients by family history of alopecia areata and then by family history of autoimmune disease in order to isolate the effects of each. We note that among patients with a family history of alopecia areata, both those with and without a family history of autoimmunity demonstrated the exact same rate of regrowth once relapse occurs (89% versus 89%; P=0.99). Similarly, among patients without a family history of alopecia areata, those with and without a family history of autoimmunity had comparable rates of regrowth once relapse occurs (100% versus 96%; P=0.29). Accordingly, unlike family history of alopecia areata, family history of autoimmunity does not appear to impair regrowth of hair after relapse occurs.

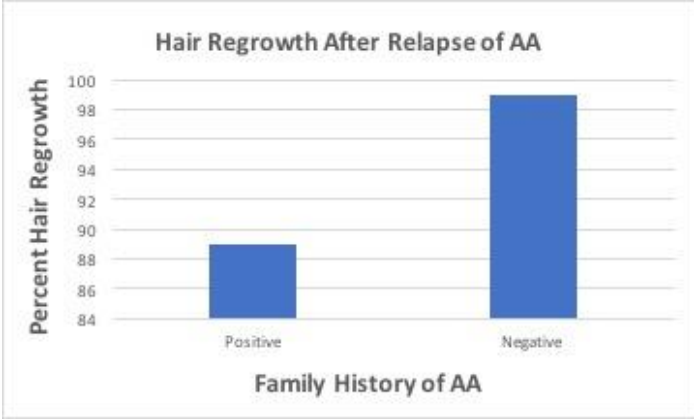

Figure 1: Significantly fewer patients with a positive family history of alopecia areata demonstrated hair regrowth after relapse (89% versus 99%; P=0.036) of alopecia areata.

Conclusion

In summary, this study presents new data aimed to help physicians and patients navigate this frustrating disease, as disease progression, response to treatment, and risk of recurrence are unpredictable. Not knowing when hair loss may occur or the extent of hair loss often elicits considerable anxiety [3]. As the first study to explore the prognostic value of family history on the clinical progression of patchy alopecia, we note that patients with a positive family history present with worse outcomes, characterized by more severe symptoms, younger age of onset,

and lower rate of regrowth once relapse occurs. It would be valuable to educate the patient on these differences. Additionally, although treatment of comorbidities may not influence the result of alopecia areata, frequently these comorbidities will initiate the first episode of alopecia areata. Clinical impression suggests that when these comorbidities are addressed and controlled, non-responders to common therapies may become responders. In the appropriate clinical setting, screening to identify concomitant comorbidities and triggers may prevent initiation of alopecia areata.

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