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The association of frontal fibrosing alopecia with skin and hair care products: A survey-based case series of 56 patients seen at the Mayo Clinic

To the Editor: Frontal fibrosing alopecia (FFA) has become increasingly reported in the literature.[1-4] Studies have suggested an association between FFA and the use of facial skincare products and sunscreens.[1,2]

We identified 148 female and 7 male patients with FFA who were evaluated at the Mayo Clinic between 1992 and 2016.[4] Of the 155 patients who were invited, 56 (36.1%) completed the survey.

The survey design was based on previous FFA studies, particularly those suggesting environmental/sunscreen etiologies, as well as expert opinion (RT, ST). A retrospective chart review was performed. Statistical analysis was performed using the JMP Pro statistical software package, version 13.0 (SAS Institute Inc, Cary, NC). Descriptive statistics are reported as a number and percentage for discrete variables. Comparisons were evaluated using Fisher's exact test. All *P* values less than .05 were considered statistically significant.

Table I. Patient characteristics at presentation

Patient characteristics	Results
Age at diagnosis, y	
Mean	62.9
Median	64
Range	35-84
Age at onset of symptoms, y	
Mean	60.4
Median	63
Range	34-81
Sex, n (%)	
Female	56 (100)
Male	0 (0)
Race, n (%)	
White	55 (98.2)
Black	1 (1.8)
Geographic distribution, n (%)	
Midwest	47 (83.9)
South	4 (7.1)
Southwest	2 (3.6)
East Coast	2 (3.6)
Puerto Rico	1 (1.8)
Natural hair color, n (%)	
Brown	41 (73.2)
Blonde	10 (17.9)
Black	4 (7.1)
Red	1 (1.8)
Hair texture before hair loss, n (%)	
Fine or thin	19 (33.9)
Medium (neither thin nor thick)	19 (33.9)
Thick or coarse	18 (32.1)
Clinical examination findings, n (%)	
Eyebrow loss	45 (80.4)

Patient demographics are described in Table I. Most patients (89.3%) received a biopsy, with 100% showing histopathologic features consistent with FFA. Eyebrow loss was noted in 45 (80.4%) patients. Forty-four (78.6%) patients received continuous follow-up care at the Mayo Clinic. Response to treatment included unaltered disease progression in 20 (45.5%), slowing of disease progression in 17 (38.6%), and disease stabilization in 7 (15.9%).

Patients were asked to respond based on their behavior in the 5 to 10 years before the onset of hair loss. The results are summarized in Table II. The overall results indicate that 62.5% (n = 35) of patients with FFA used some facial sunscreen product daily. This rate is higher than that reported for regular sunscreen use across the United States (42.6% of women reported regularly using sunscreen on the face when outside on a warm sunny day for longer than 1 hour).[5] Additionally, 57.1% (n = 32) of patients with FFA reported regular (at least weekly)

Table II. Sunscreen product use in patients with known frontal fibrosing alopecia diagnosis

Sunscreen product use	n (%)
Weekly facial sunscreen product used alone, n (%)	7 (12.5)
Weekly facial moisturizer with sunscreen product used alone, n (%)	5 (8.9)
Weekly foundation with sunscreen product used alone, n (%)	2 (3.6)
Multiple (2+) sunscreen products used weekly, n (%)	32 (57.1)
Face sunscreen product use frequency, n (%)	
Never	7 (13.0)
At least once per year	6 (11.1)
At least once per month	6 (11.1)
At least once per week	7 (13.0)
Twice a week or more	10 (18.5)
Every day	18 (33.3)
Face sunscreen product use duration, n (%)	
None/did not use	7 (13.0)
5 years or less	3 (5.6)
Between 5 and 10 years	9 (16.7)
10 years or more	35 (64.8)
Facial moisturizer with sunscreen product use frequency, n (%)	
Never	18 (32.1)
At least once per year	1 (1.8)
At least once per month	3 (5.4)
At least once per week	4 (7.1)
Twice a week or more	5 (8.9)
Every day	25 (44.6)
Facial moisturizer with sunscreen product use duration, n (%)	
None/did not use	18 (32.1)
5 years or less	3 (5.4)
Between 5 and 10 years	6 (10.7)
10 years or more	29 (51.8)
Foundation with sunscreen product use frequency, n (%)	
Never	23 (41.1)
At least once per year	6 (10.7)
At least once per month	0 (0)
At least once per week	3 (5.4)
Twice a week or more	6 (10.7)
Every day	18 (32.1)
Foundation with sunscreen product use duration, n (%)	
None/did not use	23 (41.1)
5 years or less	2 (3.6)
Between 5 and 10 years	7 (12.5)
10 years or more	24 (42.9)

use of multiple (at least 2) sunscreen products (facial sunscreen, facial moisturizer with sunscreen, and/or foundation with sunscreen). However, when we compared disease progression in patients who used daily facial sunscreen products with those who did not use sunscreen products on a daily basis, the association between daily facial sunscreen product use and unaltered disease progression was not significant ($P = .2268$). Similarly, when comparing disease progression in patients who used multiple forms of sunscreen-containing products on the face on a weekly basis with those who did not, the association between using multiple forms of sunscreen on the face and unaltered disease progression was not significant ($P = .76$). Of note, these finding were in patients who were already being treated for FFA.

Limitations include the sample size, self-reported and retrospective exposure data, lead time bias, recall bias, and misclassification of exposure. Limitations making results less generalizable include a majority white cohort and lack of male responses. Future studies with a control group that control for lead time bias and length of product use are needed.

In conclusion, although our study found that patients with FFA reported higher-than-average use of regular sunscreen product, daily facial sunscreen use and regular use of multiple sunscreen-containing products were not associated with worsening disease progression in treated patients with FFA.

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Effect of statin use on incidence of eczema and atopic dermatitis: A retrospective cohort study

To the Editor: Statins are widely prescribed because of their efficacy in primary and secondary prevention of myocardial infarction via alterations in cholesterol metabolism.[1] Numerous statin-induced dermatologic complications have been reported but with less attention to eczema/atopic dermatitis (Table I).[2,3] We sought to determine the relationship between statin use and incidence of eczema.

We designed a retrospective cohort study using TriNetX, a global federated health research network providing access to statistics on electronic medical records (diagnoses, medications, laboratory values) from approximately 1 million patients admitted to the University of Iowa Hospitals and Clinics. TriNetX is an autogenerated, deidentified database with a waiver from the Western Institutional Review Board. Patients were selected based on a history of coronary artery disease to ensure robust statin use. A cohort taking a statin before January 1, 2012, was compared to a statin-naive population in terms of eczema (*International Classification of Diseases*, 10th revision, L20-L30) development over a 6-year period to January 1, 2018. Individuals using nonstatin antilipemic medications, such as ezetimibe, were excluded. We further stratified results by demographic factors and particular statin use (atorvastatin vs simvastatin). Comparisons were made using multivariate logistic regression models (SAS, version 9.4; SAS Institute, Cary, NC) for each stratum and for differences within strata groups.

We identified 9678 patients with heart disease, 5803 of whom had received a statin. The study population was composed of more men than women (63.0% vs 37.0%) and primarily older adults (82.6% with age > 60 y). Age and sex were similar between statin and statin-naive groups. The 6-year incidence rate (IR) of eczema in individuals taking statins was 6.77% compared to 1.68% in those not taking a statin, resulting in a risk ratio of 4.04 (95% confidence interval, 3.12-5.23; $P < .001$) (Table II). Age older than 60 years (risk ratio, 6.21) was the age group at greatest relative risk for eczema ($P < .001$). Individuals taking atorvastatin (IR, 9.09%) trended toward a marginally higher incidence of eczema than those taking simvastatin (IR, 7.78%) ($P = .0749$).

This study showed a strong association between statin use and incidence of eczema, which was largely unchanged by further stratification. Older adults, who composed a majority of the study population, had the greatest risk. Moreover, the difference between atorvastatin (higher-intensity statin) and simvastatin reflected a class effect and raises the possibility of a dose-response relationship. However, this study was limited by data availability in TriNetX, including lack of timing of disease onset. Additionally, our criteria included unspecified dermatitis, a potential confounder that may not necessarily represent eczema. Of note, our cohort had a lower prevalence of statin use compared to the typical 75% to 80%, likely because those who also used nonstatin antilipemic agents were excluded.

Statins should decrease cholesterol in the skin given their mechanism of action. However, statins have also been shown to have immunomodulating effects.[4] In older adults, who have higher risk for xerosis, eczema development may be more driven

Table I. Reported dermatologic adverse effects from statin therapy[3]

Statin medication	Reported dermatologic adverse effects
Atorvastatin	Face edema, photosensitivity reaction, cheilitis, pruritus, contact dermatitis, dry skin, acne, sweating, urticaria, eczema, seborrhea, skin ulceration, bullous dermatosis
Cerivastatin*	Hypersensitivity reaction
Fluvastatin	Rash, allergic reaction
Lovastatin	Pruritus, rash, erythema multiforme, Stevens-Johnson syndrome, toxic epidermal necrolysis, dry skin and mucous membranes, hair and nail changes, alopecia, skin discoloration, lupus erythematosus–like syndrome
Pravastatin	Rash
Simvastatin	Lichenoid eruption, lupus erythematosus–like syndrome, dermatomyositis, photosensitivity rash, eczematous changes, cheilitis

*Withdrawn from the market because of risk of severe rhabdomyolysis.