Vasculopathy associated with psoriasis, including arterial stiffness and impaired endothelial function, may predispose patients with psoriasis to dementia, particularly vascular dementia.[3] Oxidative stress and proinflammatory cytokines, which are elevated in patients with psoriasis, may impair neurogenesis and synaptic plasticity, promoting neurodegenerative processes and contributing to cognitive decline.[4] Individuals with psoriasis have been reported to have deficiencies in executive functioning, suggesting some involvement of the prefrontal cortex.[5]

Our systematic review was limited by the small number of studies included in our meta-analysis. Although these studies were all cohort studies, substantial heterogeneity was found in the pooled analysis for overall dementia, making firm conclusions difficult.

In conclusion, our findings support an association between psoriasis and vascular dementia, with more modest associations with other dementias. More research is needed to understand the impacts of psoriatic inflammation and associated predisposition to vascular disease on dementia risk and cognition.

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Ethnic variations in scalp pruritus and hair loss

To the Editor: Scalp pruritus is a common dermatologic problem that significantly affects patients' quality of life. The multifactorial etiology and limited understanding of scalp pruritus poses significant diagnostic and therapeutic challenges for clinicians.[1-3] This cross-sectional study aims to evaluate the prevalence of and risk factors for scalp pruritus in a general dermatology population, with secondary interests in scalp dysesthesia (eg, tingling, pain, burning) and hair loss.

Anonymized 22-question surveys were collected sequentially from patients attending an outpatient general dermatology clinic at Barnes Jewish Hospital in St Louis, Missouri, from April 2016 through September 2016. The questionnaire assessed demographics, presence of scalp pruritus and associated symptoms, hair care practices, and medical comorbidities. Baseline comparisons of characteristics stratified by presence of scalp pruritus were tested using the chi-square test for categorical variables and analysis of variance for continuous variables (Table I). Ethnic variation in scalp pruritus, dysesthesia, and hair loss were assessed by using multivariate logistic regression models (Table II) and

Table I. Baseline characteristics of the study population by presence of scalp pruritus

Characteristics	Scalp pruritus (n = 164)	No scalp pruritus (n = 484)	*P* value
Demographics			
Age, y, mean (SD)	52.1 (16.1)	52.2 (16.6)	.98
Sex, n (%)			
Male	51 (31.1)	190 (39.3)	.06
Female	113 (68.9)	294 (60.7)	
Race, n (%)			
White	92 (58.2)	362 (77.8)	
Black	59 (37.3)	90 (19.4)	<.001
Other*	7 (4.4)	13 (2.8)	
History of other scalp conditions, n (%)			
Dandruff			
Yes	58 (37.2)	55 (11.5)	<.001
Scalp dysesthesia			
Yes	54 (32.9)	22 (4.5)	<.001
Scalp burning			
Yes	21 (12.8)	5 (1.0)	<.001
Scalp tingling			
Yes	40 (24.4)	13 (2.7)	.001
Scalp pain			
Yes	20 (12.2)	8 (1.7)	.001
Hair loss			
Yes	83 (51.6)	178 (37.4)	.002
History of hair care practices			
Frequency of hair washing per week, mean (SD)	3.7 (2.6)	4.6 (2.4)	<.001
Hair product use,† n (%)			
Yes	133 (81.1)	363 (75.0)	.11
Hair-drying practices,‡ n (%)			
Yes	96 (58.5)	278 (57.4)	.87
History of dermatologic or medical conditions, n (%)			
Allergies			
Yes	5 (3.2)	4 (0.8)	.03
CKD			
Yes	4 (2.4)	21 (4.3)	.28
Diabetes			
Yes	34 (20.7)	56 (11.6)	.003
DJD			
Yes	25 (16.2)	78 (16.4)	.97
Eczema			
Yes	31 (18.9)	50 (10.3)	.004
Forearm itch			
Yes	18 (11.3)	26 (5.5)	.01
Liver disease			
Yes	4 (2.4)	6 (1.2)	.28
Neck pain			
Yes	28 (17.6)	63 (13.2)	.16
Psoriasis			
Yes	24 (14.6)	30 (6.2)	.001
Shoulder itch			
Yes	26 (16.6)	24 (5.0)	<.001

CKD, Chronic kidney disease; *DJD,* degenerative joint disease.
**Other* includes participants who identified with a race or ethnicity that made up less than 5% of the total study population (eg, Asian, Hispanic, or multiracial).
†*Hair product use* was defined as a dichotomous variable indicating the use of shampoo, conditioner, gel, mousse, hair spray, and/or hair grease.
‡*Hair-drying practices* was defined as a dichotomous variable indicating the use of a permanent hairstyle, blow dryer, curling iron, flat iron, and/or hot comb.

subgroup analyses by race. $P < .05$ was considered statistically significant. Statistical analysis was conducted with STATA, version 14 (StataCorp, College Station, TX).

A total of 648 participants completed the survey (407 [62.8%] women; mean [standard deviation] age of 52 [16] years). Most participants were white (n = 454; 72.9%), followed by black (n = 147; 23.9%). The overall prevalence values of scalp pruritus, dysesthesia, and hair loss were 25.3%, 11.7%, and 40.2%, respectively. Participants with scalp pruritus were more likely to report scalp dysesthesia and hair loss, although the majority did not report symptoms of scalp dysesthesia (Table I). Black participants had a higher prevalence of scalp pruritus (40.1% vs 20.3%), dysesthesia (24.5% vs 7.5%), and hair loss (45.8% vs 39.2%) than white participants.

After adjustment for confounders, black participants had a more than 2-fold increased odds of scalp pruritus (odds ratio [OR], 2.13; 95% confidence interval [CI], 1.10-4.13) and dysesthesia (OR, 2.73; 95% CI, 1.18-6.30) compared to white participants (Table II). Black participants had increased odds of hair loss compared to white participants after adjustment for scalp pruritus (OR, 1.88; 95% CI, 1.0503.37) and dysesthesia (OR, 1.77; 95% CI, 0.98-3.19) (Table II). Scalp pruritus and dysesthesia were independently associated with hair loss (Table II). Black participants with scalp pruritus and dysesthesia were more likely to report hair loss than black participants without scalp pruritus or dysesthesia (OR, 3.74 [95% CI, 1.39-10.10] and OR, 10.95 [95% CI, 2.92-41.14], respectively). Among white participants, scalp

Table II. Multivariate logistic regression models of the association of race with scalp pruritus, scalp dysesthesia, and hair loss

Variables	Odds ratio	95% CI	*P* value
Scalp pruritus model*			
Race			
White	ref	ref	ref
Black	2.13	(1.10-4.13)	.02
Other†	1.61	(0.50-5.14)	.42
Scalp dysesthesia model*			
Race			
White	ref	ref	ref
Black	2.73	(1.18-6.30)	.02
Other†	1.52	(0.30-7.62)	.61
Hair loss models			
Model 1‡			
Scalp pruritus	1.73	(1.09-2.75)	.02
Race			
White	ref	ref	ref
Black	1.88	(1.05-3.37)	.03
Other†	4.01	(1.24-12.96)	.02
Model 2§			
Scalp dysesthesia	3.21	(1.72-6.01)	<.001
Race			
White	ref	ref	ref
Black	1.77	(0.98-3.19)	.06
Other†	4.23	(1.28-13.97)	.02

CI, Confidence interval; *ref,* reference group.
*Models adjusted for demographics (age, sex), hair care practices, and medical comorbidity variables (allergies, dandruff, chronic kidney disease, diabetes mellitus, liver disease, psoriasis, eczema, degenerative joint disease, neck pain, and forearm and shoulder itch).
†*Other* includes participants who identified with a race or ethnicity that made up less than 5% of the total study population (eg, Asian, Hispanic, or multiracial).
‡Hair loss model 1 is adjusted for scalp pruritus in addition to demographics, hair care practices, and medical comorbidity variables.
§Hair loss model 2 is adjusted for scalp dysesthesia in addition to demographics, hair care practices, and medical comorbidity variables.

pruritus and dysesthesia were not significantly associated with hair loss. In all multivariable modeling, hair care practices were not significantly associated with scalp pruritus, dysesthesia, or hair loss.

This study establishes the high prevalence and ethnic variation of scalp pruritus in a general dermatology population. Black participants were disproportionately affected by scalp pruritus, dysesthesia, and hair loss.[4,5] Our study was limited by its cross-sectional design and self-reported, anonymized questionnaires, precluding causal and temporal inferences. Recruitment from a single-institution dermatology clinic subjects our study to sampling bias (eg, oversampling of patients with psoriasis). Future studies are needed to investigate the ethnic variations and temporal relationships of scalp pruritus, dysesthesia, and hair loss.

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A retrospective analysis of atypical fibroxanthoma treated with Mohs micrographic surgery at a single academic institution

To the Editor: Atypical fibroxanthoma (AFX) is a rare spindle cell malignant neoplasm that arises within the dermis and appears as a red-to-pink nodule that generally affects older men on chronically sun-damaged skin, such as the head and neck region.[1-3]