

low-dose oral minoxidil; pCIA; persistent chemotherapy-induced alopecia; topical minoxidil.

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Conflicts of interest

None disclosed.

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Evaluating the utility of screening corticosteroids found in standard/baseline patch testing series



To the Editor: Hypersensitivity to topical corticosteroids has been well described, affecting up to 5% of patients.¹ Moreover, patients hypersensitive to one topical corticosteroid often react to other corticosteroids.¹⁻³ Patch testing is commonly used to detect such hypersensitivity. Due to the large number of topical corticosteroids available and limited space within typical standard/baseline patch testing series, a small corticosteroid subset is frequently chosen to screen for corticosteroid hypersensitivity. Current patch testing standard/baseline series have differing recommendations for corticosteroids utilized in screening, depending on the institution performing the testing (Table 1). For example, screening corticosteroids in the Mayo Clinic Standard Series are budesonide, tixocortol-21-pivalate, hydrocortisone-17-butyrate, clobetasol-17-propionate, desoximetasone, and triamcinolone acetonide. When clinically

Table 1. Topical corticosteroids included in the TRUE test, American Contact Dermatitis Society Core Series, European Baseline Series, North American Contact Dermatitis Group Screening Series, and the Mayo Clinic Standard Series

Series	TRUE test	ACDS Core Series	European Baseline Series	NACDG	Mayo Clinic Standard Series
Corticosteroids included (vehicle)	Tixocortol-21-pivalate (povidone)	Tixocortol-21-pivalate 1% (pet)	Tixocortol-21-pivalate 0.1% (pet)	Tixocortol-21-pivalate 1% (pet)	Tixocortol-21-pivalate 1% (pet)
	Budesonide (povidone)	Budesonide 0.1% (pet)	Budesonide 0.01% (pet)	Budesonide 0.1% (pet)	Budesonide 0.01% (pet)
	Hydrocortisone-17-butyrate (povidone)	Hydrocortisone-17-butyrate 1% (pet)		Hydrocortisone-17-butyrate 1% (pet or alc)	Hydrocortisone-17-butyrate 1% (alc)
		Clobetasol-17-propionate 1% (pet)		Clobetasol-17-propionate 1% (pet)	Clobetasol-17-propionate 1% (pet)
		Triamcinolone acetonide 1% (pet)		Triamcinolone acetonide 1% (pet)	Triamcinolone acetonide 1% (pet)
				Desoximetasone 1% (pet)	Desoximetasone 1% (pet)

ACDS, American Contact Dermatitis Society; Alc, alcohol; NACDG, North American Contact Dermatitis Group; Pet, petrolatum; TRUE, thin-layer rapid use epicutaneous.

Table II. Summary of calculated miss rates of various standard/baseline patch test series, based on Mayo Clinic data from 2010 to 2019

Patch test series	Total positive patch tests	Total positive patch tests that would have been missed*	Screening miss rate
TRUE Test	180	82	45.56%
ACDS Core Series	143	60	41.96%
European Baseline Series	201	110	54.73%
NACDG/Mayo Standard Series	112	35	31.25%

To reduce incorporation bias, corticosteroids used in each screening set were excluded from cognate miss rate analysis.

ACDS, American Contact Dermatitis Society; NACDG, North American Contact Dermatitis Group.

*"Missed" is defined as positive corticosteroid patch tests, when the corresponding screening corticosteroid patch tests were negative.

indicated, patients are also tested to an expanded corticosteroid series (Supplementary Table I, available via Mendeley at <https://data.mendeley.com/datasets/pbh6z5s664/1>). This study sought to compare the efficacy of commonly used corticosteroid screening sets in detecting corticosteroid sensitivity.

How well do screening corticosteroids in the standard/baseline series perform, in comparison to the larger corticosteroid series? We assessed the performance of screening corticosteroids in 4 standard series (Thin-layer Rapid Use Epicutaneous [TRUE], American Contact Dermatitis Society Core, European Baseline, and North American Contact Dermatitis Group [or Mayo Clinic Standard] – Table I) against corticosteroid patch tests conducted at Mayo Clinic between 2010 and 2019 (5637 patients). We report the "miss rates" that represent how many untested positive corticosteroid patch tests would have been missed, if a patient were only screened with a baseline series as opposed to a more extensive corticosteroid patch test panel. To determine the miss rate for any given corticosteroid screening set, we divided the missed positive patch tests by the total positive patch tests to all corticosteroids. In this analysis, we excluded any corticosteroid used in each screening set itself to reduce incorporation bias, ie, utilizing screening corticosteroid positivity to define screening success would artificially decrease the miss rate.

We found that many positive corticosteroid patch tests would be missed if solely using screening corticosteroids found in standard/baseline series (Table II). Topical corticosteroids in the European Baseline Series had a miss rate of 54.73%. The TRUE test was determined to have a miss rate of 45.56%. The American Contact Dermatitis Society Core Series had a miss rate of 41.96%. Finally, the North American Contact Dermatitis Group and Mayo Clinic series was found to have a miss rate of 31.25% (Table II).

There are a number of limitations to our analysis. Because only a subset of patients with high suspicion of corticosteroid sensitivity underwent testing to our extended series, the miss rates determined may not be fully reflective of the general patch test population, but rather enrich for patients more likely to be hypersensitive to corticosteroids. Furthermore, optimization of these miss rates may be partially constrained by the inherent limitations of patch testing itself and number of allergens placeable due to body surface area/reimbursements.

Further investigation is recommended to optimize the use of screening corticosteroids in the detection of patients with corticosteroid allergy. Until then, we propose that corticosteroid testing should be considered in accordance with patients' previous, current, or potential corticosteroid usage.

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Lichen sclerosus among women with psoriasis: A cross-sectional study in the *All of Us* research program



To the Editor: Psoriasis is a chronic inflammatory skin and systemic disease.¹⁻³ There is emerging evidence to suggest an association between psoriasis and lichen sclerosus (LS), a chronic inflammatory dermatosis primarily involving the anogenital area in women, although large-scale studies of this relationship have been limited.¹⁻³ To better understand the association between psoriasis and LS among adult women, we conducted an analysis of *All of Us*, a National Institutes of Health database with electronic health record data on >300,000 US adults from 2018 to the present.⁴

In this cross-sectional study, we identified all women in the *All of Us* cohort with an electronic health record diagnosis of psoriasis using the *International Classification of Diseases, Ninth Revision* (ICD-9) 696, ICD-10 L40, and/or Systematized Nomenclature of Medicine (SNOMED) 9014002 diagnostic codes. The psoriasis cohort was compared with a control group of women without psoriasis to calculate differences in prevalence of LS (defined as ICD-9 701.0, ICD-10 L90.0, SNOMED 25674000). Logistic regression was used to calculate odds ratios, and multivariable models were built to adjust for age, race/ethnicity, smoking status, and common comorbidities of hypertension, type II diabetes mellitus, and autoimmune disease.

Among 145,731 adult US women in this cohort, there were 3490 women with psoriasis (average age 60 years, standard deviation 15). Women with psoriasis were significantly more likely to have LS than women without psoriasis (2.1% vs 0.6%, $P < .001$) (Table I) with an adjusted odds ratio of 2.63 (95% confidence interval, 2.04-3.33; $P < .001$) (Table II).

We observed a positive association between psoriasis and LS after controlling for demographic factors and common comorbidities. These findings contribute further evidence to the limited literature describing this relationship. A cross-sectional study of 10,004 women with LS found a significantly higher odds of psoriasis (odds ratio, 4.53; 95% confidence interval, 4.14-4.95); notably, however, this study did not control for potential confounding variables.¹ Other smaller-scale studies have also revealed increased rates of psoriasis in patients with LS, suggesting the possibility of a bidirectional association.^{2,3}

Our study contains several strengths, including the use of a large, diverse cohort and incorporation of multivariable models. Weaknesses include an inability to collect clinical details on psoriasis or LS severity, duration, treatment, or temporality. Because our control group is less likely to be evaluated routinely by dermatologists, who may be the first to diagnose LS, prevalence in the control group may be underestimated. The *All of Us* cohort may also not be generalizable to the United States as a whole.

Psoriasis and LS share several mechanistic similarities. Both diseases are T cell-mediated and have been associated with various autoimmune diseases.^{1,2} Underlying immune dysregulation is likely involved in the pathogenesis of both conditions, and one study of patients diagnosed with both psoriasis and LS identified a strong predisposition toward autoimmunity, with 7 out of 15 patients also having a personal history of a third concomitant autoimmune disease.⁵ Further study is necessary to better understand the common mechanisms behind these diseases.

Dermatologists should recognize that women with psoriasis are more likely to be affected by LS and perform directed history taking and physical examination in this population when appropriate.

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