

ADI or were United States based.<sup>4</sup> Broader measures may more comprehensively capture the relevant factors of the social environment; the ADI is a standardized tool that could be leveraged to promote consistency across future work in the United States.

Finally, acne, molluscum, and hemangioma were all negatively associated with ADI even after accounting for race. Families may not pursue care for these visually distressing yet asymptomatic conditions due to necessity of managing other life stressors. Alternatively, referring providers may deprioritize these conditions and fail to refer these patients.

This is an urban, single institution study thus limiting generalizability to rural areas without a pediatric dermatology workforce. Nevertheless, the clinic serves a diverse, large urban and suburban catchment and assessed over 10,000 patients.

Reliance upon race, a social construct, for sole consideration of health disparities in dermatology may be flawed and an honest assessment of the role of race in medicine is needed.<sup>5</sup> Paradigm shifts must include consideration of social context when conceptualizing of health disparities.

Dr Beiter's collaboration with Dr Rosenblatt was supported by the Society of Pediatric Dermatology Medical Student Mentorship Award. This work was also presented preliminarily at the PeDRA (Pediatric Dermatology Research Alliance) Annual Meeting in November 2022 for which Dr Beiter received a travel grant. Neither Society of Pediatric Dermatology nor PeDRA had any involvement with project conception, design, data collection, analyses/interpretation, nor decision to publish this work.

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Funding sources: None.

IRB approval status: Approved by the University of Chicago IRB.

Patient consent: Not applicable.

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#### Conflicts of interest

None disclosed.

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<https://doi.org/10.1016/j.jaad.2023.08.007>

#### Recurrence and survival in early-stage acral lentiginous melanoma: A retrospective analysis



*To the Editor:* Acral lentiginous melanoma (ALM) is a rare subtype of cutaneous melanoma occurring on acral surfaces such as the palms and soles.<sup>1</sup> It is the most common melanoma among patients of color and carries a poor prognosis.<sup>2</sup> The poor outcomes associated with ALM have been attributed to delays in diagnosis, recurrence patterns, and inherent molecular or biological differences, yet there is no consensus to date.<sup>1-4</sup> Using a multi-institutional cohort, this study aims to determine if differences in recurrence patterns between ALM and superficial spreading melanoma (SSM) contribute to the observed differences in survival.

We retrospectively studied stage I and II ALM or SSM patients at Massachusetts General Brigham Healthcare System and Dana-Farber Cancer Institute. ALM patients were 1:3 propensity-score matched to SSM controls based on age, sex, and race. SSM served as the control group because it is the most common and extensively researched subtype.<sup>5</sup> Cox proportional hazard models assessed recurrence-free survival (RFS) and overall survival (OS) in ALM and SSM, controlling for age, sex, thickness, ulceration, mitosis, Charlson Comorbidity Index, and history of melanoma. A logistic regression model assessed the association between ALM and SSM and recurrence type

**Table I.** Patient and clinicopathological tumor characteristics, acral lentiginous melanoma ( $N = 131$ ) and superficial spreading melanoma ( $N = 431$ )

Characteristic	Overall, $N = 562$	SSM, $N = 431$	ALM, $N = 131$	$P$ value*
Age, median (IQR)	64 (54-74)	64 (54-75)	64 (51-73)	.37
Sex, $n$ (%)				.36
Female	341 (61)	257 (60)	84 (64)	
Male	221 (39)	174 (40)	47 (36)	
Race, $n$ (%)				<.001 <sup>†</sup>
Asian	3 (0.5)	0 (0)	3 (2.3)	
Black	2 (0.4)	0 (0)	2 (1.5)	
White	555 (99)	429 (100)	126 (96)	
Stage, $n$ (%)				.19
1A	194 (35)	148 (34)	46 (35)	
1B	233 (41)	186 (43)	47 (36)	
2A	74 (13)	57 (13)	17 (13)	
2B	44 (7.8)	30 (7.0)	14 (11)	
2C	17 (3.0)	10 (2.3)	7 (5.3)	
Thickness, $n$ (%)				.034 <sup>†</sup>
<1	264 (47)	207 (48)	57 (44)	
1-2	180 (32)	145 (34)	35 (27)	
>2	116 (21)	79 (18)	37 (29)	
Ulceration, $n$ (%)	84 (15)	57 (13)	27 (21)	.038 <sup>†</sup>
Mitotic rate $n$ (%)				.076
<2	285 (55)	204 (52)	81 (64)	
2-5	144 (28)	114 (29)	30 (24)	
>5	87 (17)	71 (18)	16 (13)	
Location, $n$ (%)				<.001 <sup>†</sup>
Upper limb	158 (28)	125 (29)	33 (25)	
Face	43 (7.7)	43 (10.0)	0 (0)	
Lower limb and hip	190 (34)	92 (21)	98 (75)	
Scalp and neck	32 (5.7)	32 (7.4)	0 (0)	
Trunk	139 (25)	139 (32)	0 (0)	
Melanoma history, $n$ (%)	62 (15)	41 (13)	21 (24)	.011 <sup>†</sup>
Charlson Index, median (IQR)	1.00 (0.00-2.00)	1.00 (0.00-2.00)	1.00 (1.00-2.00)	.25
Recurrence, $n$ (%)	111 (20)	83 (19)	28 (21)	.59
Died, $n$ (%)	197 (35)	146 (34)	51 (39)	.29

ALM, Acral lentiginous melanoma; IQR, interquartile range; SSM, superficial spreading melanoma.

\*Wilcoxon rank sum test; Pearson's Chi-squared test; Fisher's exact test.

<sup>†</sup> $P < .05$ .

(locoregional vs distant). A chi-squared test compared excision margins and adherence to the American Joint Committee on Cancer Guidelines in the treatment of ALM and SSM tumors.

We identified 131 patients with ALM and 431 with SSM (Table I). The 5- and 10-year OS of ALM was 73% (66% to 81%) and 65% (57% to 74%) vs 87% (83% to 90%) and 68% (63% to 73%) for SSM, respectively. The 3- and 5-year RFS of ALM was 88% (82% to 94%) and 82% (76% to 89%) vs 86% (83% to 89%) and 84% (80% to 88%) for SSM, respectively. After multivariate adjustment, ALM was associated with a significantly worse OS (hazard ratio = 1.94, 95% confidence interval [CI]: 1.32 to 2.85,  $P < .001$ ) compared to SSM. The recurrence rate of ALM was 21% ( $N = 28$ ) vs 19%

( $N = 83$ ) in SSM ( $P = .59$ ), and there were no significant differences in RFS after multivariate adjustment (hazard ratio = 1.64, 95% CI: 0.93-2.90,  $P = .087$ ) (Table II). Of the recurrent melanomas, ALM tumors were more likely to distantly recur (71%) compared to SSM patients (46%) ( $P = .019$ ), even after multivariate adjustment (Odds ratio = 4.88, 95% CI: 1.30-21.80,  $P = .026$ ) (Supplementary Table I, available via Mendeley at <https://doi.org/10.17632/s7y9ydz6nc.1>). Regarding excision margins, 15.45% (17/110) of ALM cases had inadequate excision margins vs 6.38% (24/376) of SSM tumors ( $P = .003$ ). Among the tumors with inadequate excision margins, a higher proportion of ALM tumors (58.8%, 10/17) experienced recurrence compared to SSM melanomas (33.3%, 8/24); however,

**Table II.** Cox multivariate model for recurrence-free survival and overall survival

Characteristic	Recurrence free survival (RFS)		Overall survival (OS)	
	HR (95% CI)	P value	HR (95% CI)	P value
Age	1.02 (1.00-1.04)	.093	1.08 (1.07-1.10)	<.001*
Sex				
Female	—		—	
Male	1.52 (0.93-2.51)	.10	1.31 (0.90-1.91)	.16
Melanoma type				
SSM	—		—	
ALM	1.64 (0.93-2.90)	.087	1.95 (1.24-3.06)	.004*
Thickness (mm)				
<1	—		—	
1-2	2.07 (1.00-4.27)	.050*	1.41 (0.89-2.24)	.15
>2	5.80 (2.58-13.1)	<.001*	1.89 (1.04-3.46)	.038*
Ulceration				
Absent	—		—	
Present	1.14 (0.65-2.03)	.64	2.19 (1.37-3.50)	.001*
Mitotic rate				
<2	—		—	
2-5	1.92 (1.01-3.63)	.046	1.11 (0.70-1.77)	.65
>5	2.79 (1.34-5.80)	.006*	1.75 (0.97-3.17)	.063
Charlson Index	1.07 (0.98-1.17)	.12	1.09 (1.03-1.16)	.005*
Melanoma history				
No history	—		—	
History	0.97 (0.52-1.79)	.92	0.76 (0.45-1.26)	.29

ALM, Acral lentiginous melanoma; CI, confidence interval; HR, hazard ratio; SSM, superficial spreading melanoma.

\* $P < .05$ .

this difference was not statistically significant ( $P = .105$ ) (Supplementary Table II, available via Mendeley at <https://doi.org/10.17632/s7y9ydz6nc.1>).

These data demonstrate that the observed decrease in OS among ALM patients may be partially attributed to a higher likelihood of distant recurrence, which may be associated with inadequate excision margins in the treatment of ALM tumors. Additionally, statistically significant differences in tumor thickness and ulceration rates between ALM and SSM tumors could have contributed to observed outcomes.

This study is limited by its retrospective nature, singular geography, and homogeneous cohort, which includes only 5 non-white patients (0.89%). Further investigations are necessary to understand the factors influencing recurrence processes in ALM and SSM.

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*Funding sources: Y.R.S. is supported in part by the Department of Defense under award number W81XWH2110819, by the Dermatology Foundation, and the National Institute of Health, K23AR080791-01A1.*

*IRB approval status: Reviewed and approved by the Mass General Brigham IRB (protocol #2020P002179).*

*Patient consent: Not applicable.*

*Key words: acral lentiginous melanoma; distant; local; recurrence; skin of color; survival.*

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#### Conflicts of interest

None disclosed.

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<https://doi.org/10.1016/j.jaad.2023.06.064>

## Underdiagnosis of psoriasis in underrepresented groups: An “All of Us” database analysis



*To the Editor:* Underrepresented groups (UGs) defined by race, ethnicity, age, sexual orientation, socioeconomic status (SES), and disability experience challenges in receiving dermatologic care.<sup>1</sup> Psoriasis is an inflammatory disease associated with comorbidities, and its underdiagnosis can negatively impact the quality of life of patients.<sup>2</sup>

We seek to determine whether psoriasis is underdiagnosed in UG. A cross-sectional analysis of the “All of Us” database, an initiative by the National Institutes of Health aimed at recruiting UG, was performed. Electronic health records were used to determine psoriasis diagnosis, and linked survey data provided demographic information. We performed multivariable logistic regressions to estimate the adjusted odds ratios (ORs) for psoriasis diagnosis.

From May 2017 to June 2022, the database included a total of 372,380 participants, and 225,050 (60.4%) participants had analyzable electronic health record data. A total of 6362 (2.8%) participants were diagnosed with psoriasis. Sociodemographic characteristics and comorbid conditions are outlined in [Table 1](#). Black (OR, 0.33; 95% CI, 0.29-0.37), Hispanic (OR, 0.71; 95% CI, 0.64-0.78), and “other” non-White participants (OR, 0.73; 95% CI, 0.62-0.84) had decreased odds of psoriasis diagnosis. Participants with low educational

attainment, low annual household income, and no health insurance also had decreased adjusted odds of psoriasis diagnosis. Participants who identified themselves as lesbian, gay, bisexual, transgender, and queer and those with disability had higher adjusted odds of psoriasis diagnosis. The effect of health insurance status on psoriasis diagnosis was different across age groups ([Table 2](#)). In younger participants (age, <65), lack of insurance was associated with lower odds of psoriasis diagnosis (OR, 0.44; 95% CI, 0.33-0.58). However, in older participants (age, >65), insurance status was no longer associated with a psoriasis diagnosis.

Estimates of psoriasis diagnosis in Blacks and Hispanics are 1.5% and 1.9%, respectively compared with 3.6% in Whites, although true prevalence may be lower.<sup>3</sup> In our study, after adjusting for confounders, the odds of psoriasis diagnosis in the skin of color (SOC) participants were significantly lower than those in Whites. This discrepancy observed in our analysis can be explained by diagnostic challenges in identifying psoriasis in SOC due to less perceptible erythema and postinflammatory dyspigmentation.<sup>1</sup> SOC patients are also less likely to have access to dermatologists, which can contribute to delays in appropriate intervention, as evidenced by higher hospitalization rates for psoriasis.<sup>4</sup>

Lower SES was associated with significantly lower odds of psoriasis diagnosis. High health care costs compounded by decreased insurance coverage may deter patients from seeing specialists, resulting in the underdiagnosis of psoriasis. Additionally, individuals with lower SES face challenges with health literacy, leading to difficulties in locating providers.<sup>5</sup> Individuals aged >65 years had higher odds of psoriasis diagnosis compared with younger individuals; however, this association was no longer seen when adjusted for comorbidities.

The limitation of a cross-sectional study design is the inability to make causal inferences, but a large sample size and diverse data set are its strengths. Although the lower incidence of psoriasis in UG found in this study is likely due to underdiagnosis, a true difference in disease incidence between different populations cannot be completely excluded. By acknowledging and addressing psoriasis underdiagnosis, dermatologists can help reduce unmet needs.

The “All of Us” Research Program is supported by the National Institutes of Health, Office of the Director: Regional Medical Centers: 1 OT2 OD026549; 1 OT2 OD026554; 1 OT2 OD026557; 1 OT2 OD026556; 1 OT2 OD026550; 1 OT2 OD 026552; 1 OT2 OD026553; 1 OT2 OD026548; 1 OT2 OD026551; 1 OT2 OD026555; IAA #: