Racial Disparities in the Diagnosis of Psoriasis

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PRACTICE **POINTS**
- Skin of color (SOC) patients can wait 3 times longer to receive a diagnosis of psoriasis than non-SOC patients.
- Patients with SOC more often present with severe forms of psoriasis and are more likely to have palmoplantar psoriasis.
- Skin of color patients can be 4 times as likely to require a biopsy to confirm psoriasis diagnosis compared to non-SOC patients.

To the Editor:

Psoriasis affects 2% to 3% of the US population and is one of the more commonly diagnosed dermatologic conditions.[1-3] Experts agree that common cutaneous diseases such as psoriasis present differently in patients with skin of color (SOC) compared to non-SOC patients.[3,4] Despite the prevalence of psoriasis, data on these morphologic differences are limited.[3-5] We performed a retrospective chart review comparing characteristics of psoriasis in SOC and non-SOC patients.

Through a search of electronic health records, we identified patients with an *International Classification of Diseases, 10th Revision,* diagnosis of psoriasis who were 18 years or older and were evaluated in the dermatology department between August 2015 and June 2020 at University Medical Center, an academic institution in New Orleans, Louisiana. Photographs and descriptions of lesions from these patients were reviewed. Patient data collected included age, sex, psoriasis classification, insurance status, self-identified race and ethnicity, location of lesion(s), biopsy, final diagnosis, and average number of visits or days required for accurate diagnosis. Self-identified SOC race and ethnicity categories included Black or African American, Hispanic, Asian, American Indian and Alaskan Native, Native Hawaiian and Other Pacific Islander, and "other."

All analyses were conducted using R-4.0.1 statistics software. Categorical variables were compared in SOC and non-SOC groups using Fisher exact tests. Continuous covariates were conducted using a Wilcoxon rank sum test.

In total, we reviewed 557 charts. Four patients who declined to identify their race or ethnicity were excluded, yielding 286 SOC and 267 non-SOC patients (N=553). A total of 276 patients (131 SOC; 145 non-SOC) with a prior diagnosis of psoriasis were excluded in the days to diagnosis analysis. Twenty patients (15, SOC; 5, non-SOC) were given a diagnosis of a disease other than psoriasis when evaluated in the dermatology department.
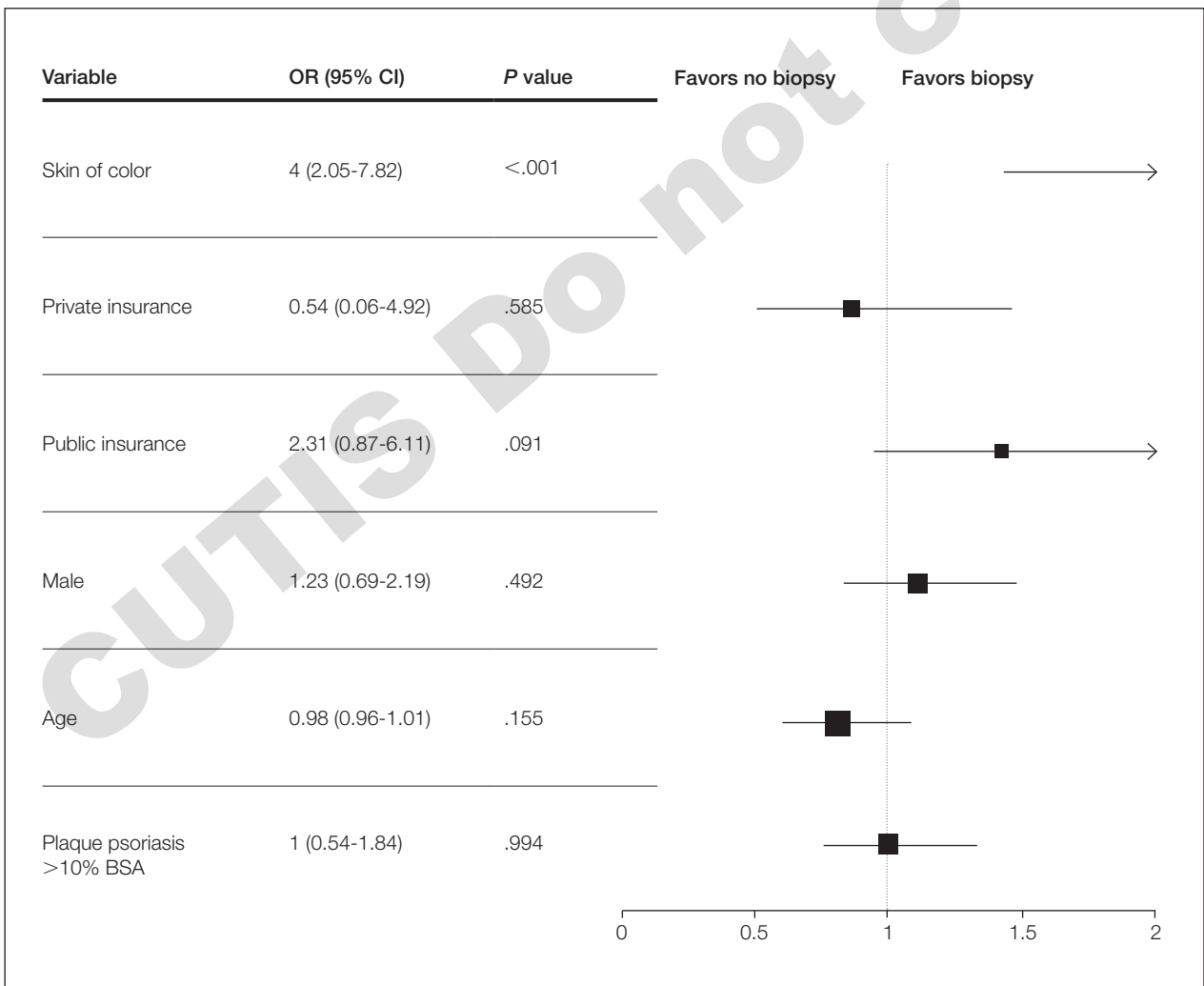
Distributions between racial groups differed for insurance status, sex, psoriasis classification, biopsy status, and days between first dermatology visit and diagnosis. Skin of color patients had significantly longer days between initial presentation to dermatology and final diagnosis vs non-SOC patients (180.11 and 60.27 days, respectively; P=.001). Skin of color patients had a higher rate of palmoplantar psoriasis and severe plaque psoriasis (ie, >10% body surface area involvement) at presentation.

Several multivariable regression analyses were performed. Skin of color patients had significantly higher odds of biopsy compared to non-SOC patients (adjusted odds ratio [95% CI]=4 [2.05-7.82]; P<.001) (Figure 1). There were no significant predictors for severe plaque psoriasis involving more than 10% body surface area. Skin of color patients had a significantly

longer time to diagnosis than non-SOC patients (P=.006) (Figure 2). On average, patients with SOC waited 3.23 times longer for a diagnosis than their non-SOC counterparts (95% CI, 1.42-7.36).

Our data reveal striking racial disparities in psoriasis care. Worse outcomes for patients with SOC compared to non-SOC patients may result from physicians' inadequate familiarity with diverse presentations of psoriasis, including more frequent involvement of special body sites in SOC. Other likely contributing factors that we did not evaluate include socioeconomic barriers to health care, lack of physician diversity, missed appointments, and a paucity of literature on the topic of differentiating morphologies of psoriasis in SOC and non-SOC patients. Our study did not examine the effects of sex, tobacco use, or prior or current therapy, and it excluded pediatric patients.

Variable	OR (95% CI)	*P* value	Favors no biopsy	Favors biopsy
Skin of color	4 (2.05-7.82)	<.001		
Private insurance	0.54 (0.06-4.92)	.585		
Public insurance	2.31 (0.87-6.11)	.091		
Male	1.23 (0.69-2.19)	.492		
Age	0.98 (0.96-1.01)	.155		
Plaque psoriasis >10% BSA	1 (0.54-1.84)	.994		

FIGURE 1. Factors predicting receiving a biopsy for psoriasis as shown by forest plots of logistic regression. Adjusted odds ratios (ORs) and confidence intervals (CIs) are displayed graphically via squares and horizontal lines, respectively. The X axis in these plots displays these ORs, with CIs overlapping the gray line at 1 indicating a nonsignificant effect of the corresponding variable on the Y axis. Variables with arrows for CIs indicate that the OR and CI were larger than the displayed values on the X axis. BSA indicates body surface area.
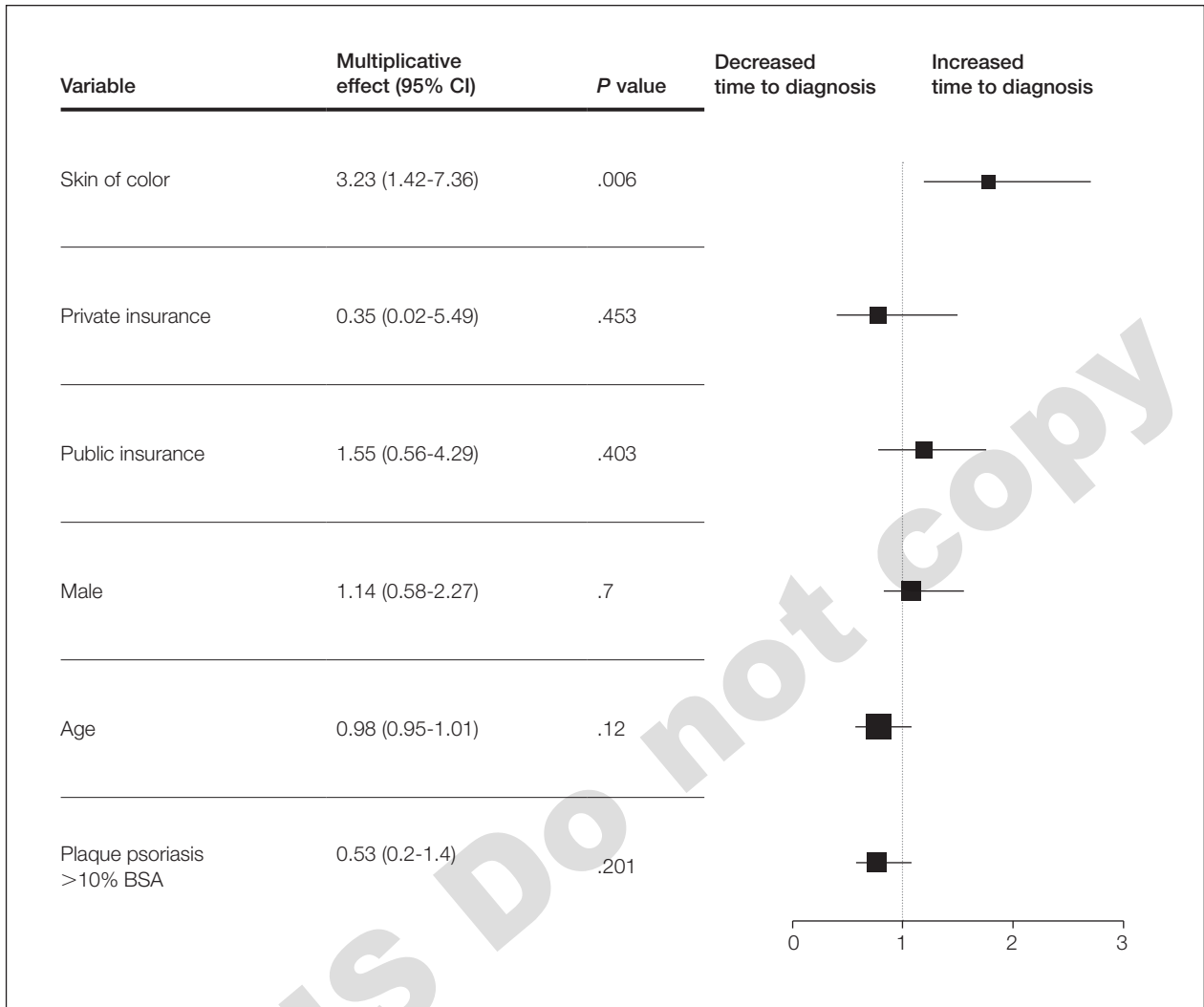
FIGURE 2. Factors affecting time from initial presentation to diagnosis as shown by forest plots of quasi-Poisson regression for time from initial presentation to dermatology to the official diagnosis of psoriasis. Adjusted multiplicative effects (MEs) and confidence intervals (CIs) are displayed graphically via squares and horizontal lines, respectively. The X axis in these plots displays these MEs, with CIs overlapping the gray line at 1 indicating a nonsignificant effect of the corresponding variable on the Y axis. Confidence intervals greater than (less than) this gray line indicate an increase (decrease) in the time from initial presentation to dermatology. BSA indicates body surface area.

To improve dermatologic outcomes for our increasingly diverse patient population, more studies must be undertaken to elucidate and document disparities in care for SOC populations.

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