

Racial Disparities in Primary Therapy for Newly Diagnosed Psoriasis Patients

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To the Editor:

Psoriasis treatments have been shown to vary by race, but racial differences in initial psoriasis treatment has not been adequately studied.^{1,2} Our objectives were to compare the initial prescription treatments received by different racial groups and examine trends over time.

After Weill Cornell Medicine IRB approval, annual numbers of patients with psoriasis were collected between January 1, 2005 and December 31, 2019. The initially prescribed treatment (phototherapy, biologics, apremilast, immunosuppressants) and

demographics were recorded. Race was determined by patient self-identification. Odds ratios (OR) were calculated using proportions of patients treated and linear regression modeling was performed. T-tests were used to compare slopes between groups of patients.

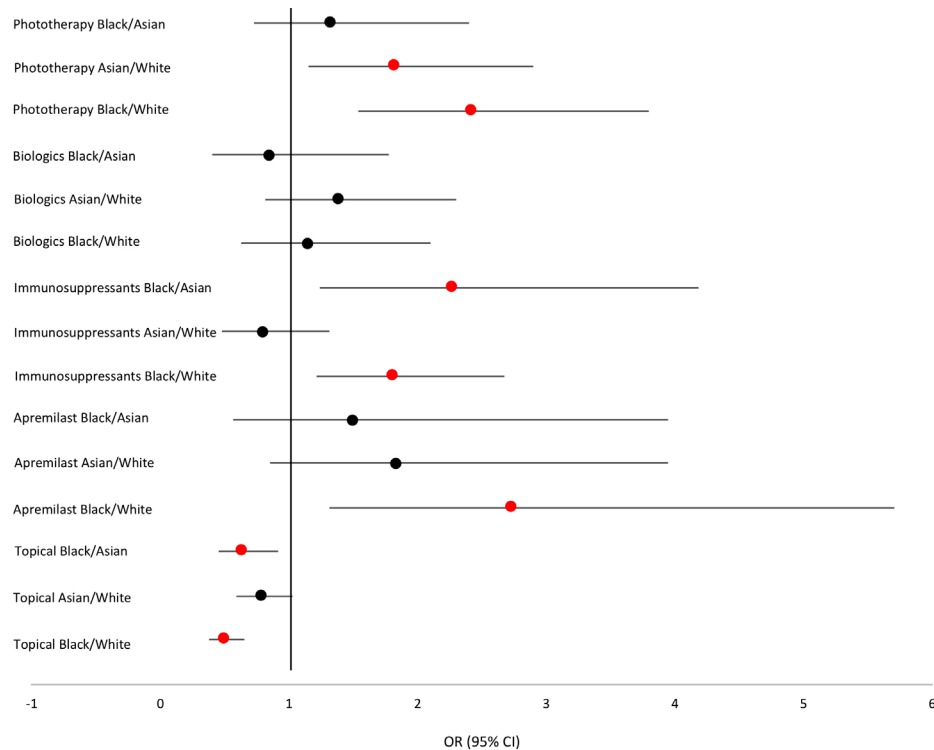
Overall, 4976 White, 478 Asian, and 400 Black newly diagnosed patients received psoriasis treatment over the study period. For initial treatments, patients were prescribed topicals (5166, 88.2%), immunosuppressants (269, 4.6%), phototherapy (174, 3.0%), biologics (159, 2.7%), or apremilast (59, 1.0%).

TABLE 1.
Linear Regression of Proportion of Patients Per Year Receiving Initial Treatment by Identified Race

	Overall % of Patients Receiving for Initial Therapy	Regression Slope	95% CI	R Square	P-Value	Regression Slope Comparison	P-Value
Phototherapy							
Asian	4.6%	-1.16%	[-1.80%, -0.52%]	0.540	0.00	Asian, Black	0.78
Black	6.0%	-1.33%	[-2.48%, -0.19%]	0.326	0.03	Black, White	0.16
White	2.6%	-0.54%	[-0.80%, -0.28%]	0.602	0.00	Asian, White	0.06
Biologics							
Asian	3.6%	0.02%	[-0.44%, +0.48%]	0.001	0.93	Asian, Black	0.07
Black	3.0%	0.64%	[+0.10%, +1.18%]	0.338	0.02	Black, White	0.13
White	2.6%	0.25%	[+0.17%, +0.34%]	0.755	< 0.001	Asian, White	0.29
Immunosuppressants							
Asian	3.6%	-0.03%	[-0.38%, +0.33%]	0.002	0.87	Asian, Black	0.03
Black	7.8%	0.77%	[+0.10%, +1.45%]	0.319	0.03	Black, White	0.20
White	4.4%	0.35%	[+0.18%, +0.52%]	0.595	0.001	Asian, White	0.05
Apremilast							
Asian	1.7%	0.56%	[-0.25%, +1.38%]	0.478	0.13	Asian, Black	0.44
Black	2.3%	1.28%	[-1.07%, +3.63%]	0.364	0.21	Black, White	0.31
White	0.8%	0.36%	[-0.11%, +0.83%]	0.528	0.10	Asian, White	0.56
Topicals							
Asian	86.4%	0.87%	[-0.01%, +1.74%]	0.262	0.05	Asian, Black	0.30
Black	80.3%	-0.20%	[-2.20%, +1.80%]	0.004	0.83	Black, White	0.99
White	89.1%	-0.19%	[-0.48%, +0.10%]	0.130	0.19	Asian, White	0.02

Linear regression of proportion of patients per year receiving phototherapy, biologics, immunosuppressants, and apremilast as initial treatment between 2005-2019, by identified race. Column 1 percentages are calculated by percent of racial group receiving specific treatment as initial therapy. Regression slope represents average change in percentage of patients per year. P-values in bold are significant at a level of α = 0.05.

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FIGURE 1. OR for likelihood of specified treatment as initial psoriasis therapy compared between racial groups.

With regard to logistic regression trends, phototherapy usage for initial treatment significantly decreased over the period of the study for all races (average decline of 0.5% to 1.3% of patients per year). Biologic and immunosuppressant use significantly increased for Blacks and Whites, with no significant trends for Asians (Table 1). Apremilast usage increased for all races but was non-significant in all groups. Topical therapies were by far the most common initial therapy in all groups (80-89%), and there was no clear trend in change over time. Mean yearly rate of change in utilization was not significantly different between races for any of the therapies except for a greater increase in immunosuppressants usage in Blacks vs. Asians (P -value = 0.03).

Asians and Blacks were significantly more likely to be prescribed phototherapy as initial non-topical treatment vs Whites (Asian/White OR: 1.83, 95% CI [1.15, 2.9]; Black/White OR: 2.42, 95% CI [1.54, 3.79]). Blacks were significantly more likely to receive immunosuppressants initially vs Whites and Asians (Black/White OR: 1.81, 95% CI [1.22, 2.67]; Black/Asian OR: 2.28, 95% CI [1.24, 4.18]). Blacks were statistically more likely to be prescribed apremilast than Whites (OR: 2.74, 95% CI [1.32, 5.71]). Blacks were significantly less likely to receive topicals as initial prescription treatment vs Whites and Asians (Black/White OR: 0.50, 95% CI [0.38, 0.65]; Black/Asian OR: 0.64, 95% CI [0.45, 0.92]). Prescribing of biologics for initial therapy did not differ between groups (Figure 1).

Our findings indicate that for initial treatments, Black patients were more likely than Asian/White patients to receive phototherapy and systemics for initial psoriasis treatment and less likely to receive topicals. One possible explanation for this trend is that Black patients have been shown to be more frequently diagnosed with psoriasis in later stages, attributed to unfamiliarity of presentation in skin of color, due to an underrepresentation of skin of color patients in textbooks, training materials, and research.⁴ Therefore, Blacks in our study may have had more severe disease, which may warrant further research and possible intervention. While our study analyzed initial therapy, previous studies have demonstrated that Black patients are less likely to receive systemic treatments overall.¹⁻³ Additionally, similar to previous research, phototherapy usage showed a decreasing trend, which we found in this study to be persistent across races.⁵ In contrast, biologics and immunosuppressants increased overall, but only for Blacks and Whites.

Limitations include single-center, retrospective design, patients excluded due to unknown/other race ($n = 4881$, 45.5%), a primarily White population, and small sample sizes for some subgroups in certain years. Only initial treatments were examined. The study was not powered to assess for disease severity, comorbidities, or concomitant psoriatic arthritis.

Overall, in regard to initial treatment, phototherapy usage for psoriasis has decreased across races, and compared to other races, phototherapy/systemics are prescribed more often to Black patients as initial treatment. Further research is needed to elucidate these differences to provide equitable and effective psoriasis treatments for all patients.

DISCLOSURES

Rhiannon Miller, Dr Mytrang Do, Sajjad Abedian declare that they have no conflicts of interest. Dr Lipner has served as a consultant for Ortho-Dermatologics, Verrica, Hoth Therapeutics, Hexima, and BelleTorus Corporation.

IRB: Approved, Protocol #1901019900

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