Comparing disease severity, therapeutic management, and clinical outcomes in pemphigus patients; A retrospective analysis of Black versus White patients evaluated and treated at Duke Dermatology

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Introduction

Previous cross-sectional studies of pemphigus patients in the US have demonstrated increased rates of hospitalization among certain racial groups[1]. Studies have also shown racial disparities in therapeutic management in patients with autoimmune disease[2,3,4]. Differences in clinical outcomes and therapeutic management amongst pemphigus patients remain largely unexplored.

Figure 1. From left to right, manifestations of pemphigus vulgaris on the back, the oral mucosa, and the face[6].

Purpose

The purpose of this study was to compare differences in disease severity, therapeutic management, and clinical outcomes in Black versus White pemphigus patients evaluated and treated at Duke Dermatology between 2012-2021.

Methods

Data was retrospectively collected from the electronic medical record for all pemphigus patients seen by Duke Dermatology between 2012 and 2021. The data was uploaded into REDCap. Odds ratios (OR) were calculated using White pemphigus patients as a reference point.

Table 1. Demographic data for Black versus White Pemphigus patients

Variable	Black Patients (Number (%)) N=35	White Patients (Number (%)) N=54
Age (years)		
18-40	7 (20.0)	3 (5.6)
41+	28 (80.0)	51 (44.4)
Sex		
Male	16 (45.7)	28 (51.9)
Female	19 (54.3)	26 (48.1)
Pemphigus Type		
Pemphigus Vulgaris	12 (34.2)	37 (68.2)
Pemphigus Foliaceus	20 (57.1)	10 (18.5)
Pemphigus Paraneoplastic	0 (0)	2 (3.8)
IgA Pemphigus	1 (2.9)	1 (1.9)
Pemphigus Vegetans	0 (0)	1 (1.9)
Pemphigus Herpetiformis	0 (0)	1 (1.9)
Pemphigus Unspecified	1 (2.9)	2 (3.8)
Drug-Induced Pemphigus	1 (2.9)	0 (0)
Insurance		
Medicaid	1 (2.8)	0 (0)
Medicare	12 (34.3)	25 (46.3)
Private	17 (48.6)	25 (46.3)
Underinsured*	5 (14.3)	4 (7.4)

*Refers to any patient without a documented primary insurance in the electronic medical records

Table 2. Clinical Outcomes in Black versus White Pemphigus Patients

Variable	Black Patients (Number (%)) N=35	White Patients (Number (%)) N=54
Charlson Comorbidity Index[5]		
0	22 (62.9)	41 (75.9)
1-2	6 (17.1)	5 (9.3)
3+	7 (20.0)	8 (14.8)
Physician-graded Assessment[Ψ]		
Clear to Almost Clear	7 (26.9)	12 (27.9)
Mild to Moderate	7 (26.9)	20 (46.5)
Moderate to Severe	5 (19.3)	6 (14.0)
Severe	7 (26.9)	5 (11.6)
Medications		
Topical Steroids Only	12 (34.3)	11 (20.4)
Oral Prednisone < 10mg Daily or NSAIDs*	4 (11.4)	8 (14.8)
Oral Prednisone ≥ 10mg Daily, Conventional Steroid-Sparing Agents**	16 (45.7)	27 (50.0)
Rituximab, Other Biologics	3 (8.6)	8 (14.8)
ED Visit		
Yes	6 (17.1)	0 (0)
No	29 (82.9)	54 (100)
Hospital Admission		
Yes	2 (5.7)	1 (1.9)
No	33 (94.3)	53 (98.1)

All data from initial clinical visit with Duke Dermatology. Medications refer to any medications prescribed to patients during initial clinic visit.
*Oral NSAIDs includes doxycycline, and dapsone.
**Conventional steroid-sparing agents includes azathioprine, mycophenolate, methotrexate, cyclosporine, and cyclophosphamide.
[Ψ]Physician-graded assessment (PGA) percentages are based on total number of patients who had a documented PGA (N=26 for Black patients and N=43 for White patients).

Results

- 46.2% of Black patients were determined to have at least moderate to severe disease based on physician graded assessment compared to 25.6% of White patients.
- After their initial clinical visit, a higher proportion of Black patients had only been prescribed topical steroids compared to White patients (34.3% versus 20.4% respectively).
- History of ED visit or hospital admission for a pemphigus flare was 0% and 1.9% for White patients versus 17.1% and 5.7% for Black patients respectively (OR = 24 (95% CI = 1.3 to 441.4) and OR = 3.2 (95% CI = 0.28 to 36.8).

Discussion

- A higher proportion of Black pemphigus patients were graded as having more severe disease and were more likely to have a history of ED visit and hospitalization than white pemphigus patients
- Despite similar insurance backgrounds, a higher proportion of Black patients had only been prescribed topical steroids after their initial clinical visit compared to White patients
- **Limitations** of this study include small patient sample size and lack of longitudinal clinical data.
- **Future studies** will examine how race, socioeconomic status, and geographic location impact therapeutic management and clinical outcomes in pemphigus patients.

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Disclosures

- Anne Marano, M.D.
  - Consultant for Immunovant, Inc.
  - Principal Investigator of clinical trials for Bristol Myers Squibb and Biogen
- No other authors have any disclosures