SKIN

RESEARCH LETTER

Disparities in Dermatomyositis Management Based on Insurance Coverage

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ABSTRACT

Dermatomyositis (DM) is a complex, systemic connective tissue disease that requires prompt management and therapy. Previous studies have shown that public insurance enrollees utilize outpatient care less frequently, potentially leading to delayed care and increased disease severity. This retrospective study evaluated the relationship between insurance coverage, healthcare utilization, and therapeutic management in DM patients seen at the University of California Irvine Medical Center between January 2016 and June 2024. We identified 118 cases of adult-onset DM in which 41.6% (49/118) were privately insured, 33.1% (39/118) were enrolled in Medicare, and 25.4% (30/118) with Medicaid. Medicaid enrollees had significantly higher rates of emergent care and hospitalizations ($p<0.001$) and required sooner intravenous immunoglobulin (IVIg) and rituximab (RTX) ($p=0.03$). They also trialed fewer systemic agents prior to infusion therapy (IVIg $p=0.02$, RTX $p=0.04$). Medicare patients exhibited patterns more similar to those with private insurance. Though there were higher rates of Hispanic patients in the Medicaid cohort ($p < 0.001$), our results were independent of race/ethnicity. These findings suggest that barriers to outpatient care amongst Medicaid patients may lead to delays in disease recognition, resulting in increased reliance on emergent care and more rapid escalation to aggressive treatments. This study underscores the need for reform to promote equitable and timely care for all patients, particularly imperative in systemic diseases such as dermatomyositis.

INTRODUCTION

When treating connective tissue diseases (CTDs) such as dermatomyositis (DM), patients may require complex and/or expensive therapies, but dermatologists and patients are often challenged by limited FDA-approved options.[1] Furthermore, patients with lower socioeconomic status (SES) have demonstrated higher rates of emergency services utilization and hospitalizations.[2] A 2018 study by Tripathi and colleagues similarly found that Medicare/Medicaid enrollees were less likely to consult outpatient dermatologic care, increasing risk of disease complications due to inadequate preventative care.[3] We therefore aimed to examine relationships between insurance coverage, healthcare utilization, and therapeutic management of dermatomyositis in a diverse patient cohort.

METHODS

This retrospective review included patients from University of California Irvine (UCI) Medical Center seen between January 2016 and June 2024 with a diagnosis of adult-onset dermatomyositis. Patients whose diagnoses met the American College of Rheumatology and European League Against Rheumatism (ACR/EULAR) criteria were included. The UCI institutional review board approved this study. Patients were stratified by health insurance type. Public insurance was defined as Medicare and Medicaid. Private insurance was defined as any commercial plan. Treatment regimens, management timelines, and healthcare utilization were evaluated. Fisher's exact and Mann-Whitney U tests with post hoc pairwise comparisons using Dunn's test with Bonferroni correction were performed using R, version 4.4.0. Two-sided $p < 0.05$ was significant.

RESULTS

In our cohort of 118 DM patients, 41.6% (49/118) were privately insured, 33.1% (39/118) had Medicare, and 25.4% (30/118) had Medicaid (**Table 1**). Medicaid enrollees were more likely to be Hispanic ($p < 0.001$), but subsequent comparison between race and ethnicities yielded no significant differences in management timing, therapies trialed, or healthcare utilization trends.

Compared to privately insured patients, Medicaid enrollees were more likely to consult emergency services and/or be hospitalized ($p < 0.001$). Medicaid enrollees also initiated intravenous immunoglobulin (IVIg) and rituximab (RTX) sooner after diagnosis ($p = 0.03$) and trialed fewer systemic medications prior to IVIg ($p = 0.02$) and RTX ($p = 0.03$) compared to privately insured patients (**Table 2**). This pattern was accompanied by lower usage of mycophenolate mofetil/mycophenolic acid ($p = 0.03$), hydroxychloroquine ($p = 0.04$), and methotrexate ($p = 0.08$) amongst Medicaid patients (**Table 1**). No significant differences were noted when comparing Medicare to privately insured enrollees.

CONCLUSION

Our study highlights the impact of health insurance coverage on healthcare utilization and treatment in patients with dermatomyositis. Further stratifying public insurance by Medicare and Medicaid emphasized that disparities were primarily amongst Medicaid patients, as Medicare patients exhibited patterns similar to privately insured patients. Higher rates of emergency consults and/or hospitalizations amongst Medicaid enrollees likely reflect inadequate access to care or delays in diagnosis before onset of more severe disease manifestations.[4] This is supported by the need for more rapid escalation to aggressive treatments, such as IVIg and RTX, in our Medicaid cohort.[5] These trends align with broader patterns in dermatology, wherein publicly insured patients are less likely to consult outpatient care.[2,3]

Limitations of our study include the retrospective study design at a single institution and reliance on physician documentation.

In summary, we found that dermatomyositis patients insured by Medicaid, irrespective of race or ethnicity, experienced different therapeutic timelines and healthcare utilization. Disparities hold greater weight when managing systemic diseases that impact morbidity and mortality, such as

Table 1. Demographics of Patients with Dermatomyositis Stratified by Insurance Type

Characteristic	Private (n=49)	Medicare (n=39)	Medicaid (n=30)	*P* value [a]
Age at Diagnosis, Median (Range)	47 (21-67)	65 (24-84)	40 (19-63)	**< 0.001***
Sex	**Patients, No. (%)**			
Female	39 (79.6%)	28 (71.8%)	19 (63.3%)	0.27
Male	10 (20.4%)	11 (28.2%)	11 (36.7%)	0.27
Race and Ethnicity	**Patients, No. (%)**			
Non-Hispanic White	22 (44.9%)	19 (48.7%)	**2 (6.7%)**	**<0.001***
Hispanic or Latino	9 (18.4%)	7 (17.9%)	**19 (63.3%)**	**<0.001***
Asian	11 (22.4%)	7 (17.9%)	4 (13.3%)	0.39
Black or African American	0 (0.0%)	2 (5.1%)	1 (3.3%)	0.34
Other or Unknown	7 (14.3%)	4 (10.3%)	4 (13.3%)	0.88
Presentation	**Patients, No. (%)**			
Dermatology consult	24 (49.0%)	22 (56.4%)	11 (36.7%)	0.26
Rheumatology consult	40 (81.6%)	30 (76.9%)	24 (80%)	0.92
Neurology consult	17 (34.7%)	13 (33.3%)	7 (23.3%)	0.57
Emergency consult or hospitalization [b]	5 (10.2%)	7 (17.9%)	**16 (53.3%)**	**<0.001***
Medications	**Patients, No. (%)**			
Systemic corticosteroids	42 (85.7%)	33 (84.6%)	29 (96.7%)	0.24
IVIg	30 (61.2%)	28 (71.8%)	19 (63.3%)	0.6
Rituximab	16 (32.7%)	14 (35.9%)	15 (50.0%)	0.3
Methotrexate	25 (51.0%)	19 (48.7%)	**8 (26.7%)**	***0.08***
MMF/MPA	26 (53.1%)	10 (25.6%)	**14 (46.7%)**	**0.03***

Hydroxychloroquine	14 (28.6%)	14 (35.9%)	**3 (10.0%)**	**0.04***
Azathioprine	11 (22.4%)	11 (28.2%)	5 (16.7%)	0.53
JAKi	4 (8.2%)	1 (2.6%)	0 (0.0%)	0.31
Diagnosis	**Patients, No. (Range)**			
Diagnostic delay in months, Median (Range) [c]	4.5 (1-44)	6 (1-120)	4.5 (0.25-72)	0.82

Abbreviations: IVIg, intravenous immunoglobulin; MMF, mycophenolate mofetil; JAKi, Janus kinase inhibitor.
[a] P values calculated using the Kruskal-Wallis test for continuous variables and Fisher's exact test for categorical variables. For significant results, post hoc pairwise comparisons were performed using Dunn's test with Bonferroni correction.
[b] Emergency department or hospitalization is defined as having ever presented to the emergency department and/or been hospitalized for dermatomyositis-related conditions. Each patient was counted a maximum of one time, regardless of the number of emergency department visits or hospitalizations.
[c] Diagnostic delay is defined as time from first relevant symptom onset to time of official diagnosis.
* p<0.05 deemed statistically significant

Table 2. Management Timing in Patients with Dermatomyositis Stratified by Insurance Type

Characteristic	Private (n=49)	Medicare (n=39)	Medicaid (n=30)	*P* value [a]
Management Timing	**Patients, No. (Range)**			
Duration of high-dose[b] systemic corticosteroids in months, Median (Range)	9 (0.25-72)	13 (2-57)	1.4 (0-63)	0.36
Time from diagnosis to IVIg initiation in months, Median (Range)	7.5 (0-216)	4.5 (0-60)	**1.4 (0-63)**	**0.03***
Number of systemic medications trialed prior to IVIg, Average	2.25	2.17	**1.27**	**0.02***
Time from diagnosis to rituximab initiation in months, Median (Range)	12 (1.75-204)	6 (0.5-34)	**3 (0.25-127)**	**0.03***
Number of systemic medications trialed prior to rituximab, Average	2.7	2.77	**1.8**	**0.04***

Abbreviations: IVIg, intravenous immunoglobulin; MMF, c; JAKi, Janus kinase inhibitor.
[a] P values calculated using the Kruskal-Wallis test for continuous variables and Fisher's exact test for categorical variables. For significant results, post hoc pairwise comparisons were performed using Dunn's test with Bonferroni correction.
[b] High-dose systemic corticosteroid was defined as equivalent to >10 mg prednisone
* p<0.05 deemed statistically significant

dermatomyositis. This study supports the need for continued reform to achieve timely, accessible care for all patients with complex dermatologic diseases.

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