Characteristics of Hispanic dermatomyositis patients: a retrospective cohort study

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Introduction

- Dermatomyositis (DM) is a rare autoimmune disease characterized by distinctive cutaneous manifestations and myopathy.
- DM is associated with interstitial lung disease (ILD) and malignancy; therefore stratifying a patient's risk for morbidity and mortality is highly important.
- New standardized guidelines for malignancy screening by the International Guidelines for Idiopathic Inflammatory Myopathy-Associated Cancer Screening stratify malignancy risk [1] based on risk factors such as autoantibody expression and disease severity.
- These risk factors may vary between populations, and limited studies have described how DM manifests specifically in Hispanic patients.

Objectives

- Evaluate demographic and clinical characteristics of U.S.-based Hispanic DM patients to better understand clinical signs and outcomes for this patient population and inform clinical care.
- Highlight key similarities and differences in clinical presentation, disease severity, diagnosis, management, outcomes, and malignancy screenings between Hispanic and Non-Hispanic patients with DM.

Methods

- A retrospective cohort study was conducted on DM seen between January 1, 2010 and December 31 2022.
- Inclusion Criteria: Patients with a DM diagnosis and documented ethnicity.
- Exclusion Criteria: Patients with anti-synthetase syndrome, overlap syndrome, paraneoplastic syndrome, or a lack of charted DM information.
- Demographic characteristics included: sex, age, age at diagnosis, ethnicity ("Hispanic or Non-Hispanic"), diagnostic delay, malignancy screenings via various modalities, and medications prescribed.
- Clinical signs included: Gottron's papules, midfacial erythema, shawl sign, photodistributed erythema, heliotrope rash, mechanic's hands, holster sign, periumbilical plaque, alopecia, scalp pruritus, Raynaud's, arthralgias/arthritis, dysphagia, proximal myopathy, and fever.
- Serological values included: anti-dsDNA, anti-RNP, anti-Smith, anti-Scl-70, anti-SSA/SSB, anti-chromatin, anti-centromere, anti p/c-ANCA, rheumatoid factor, lupus anticoagulant, anti-Jo-1, anti-Ro-52, anti-PL-7, anti-PL-12, anti-Mi-2, anti-SRP, anti-MDA5, anti-TIFγ, anti-NXP2.
- Statistical analysis: Two-sample t-test for numerical outcomes and Pearson Chi-square test for independence for categorical outcomes. Low counts had continuity correction applied. Significant Chi-square results were evaluated with a two-sample proportion z-test and reported with 95% confidence interval (CI), p<.05

Results

Table 1. Demographic information of dermatomyositis patients by ethnicity

Demographics	Ethnicity	
	Hispanic (n=95)	Non-Hispanic (n=112)
Sex	**Count (%)**	**Count (%)**
Female	81 (39.1)	84 (40.6)
Male	14 (6.8)	28 (13.5)
Age		
20-29	5 (2.4)	5 (2.4)
30-39	12 (5.8)	9 (4.4)
40-49	14 (6.8)	18 (8.7)
50-59	23 (11.1)	25 (12.1)
60-69	29 (14)	29 (14)
70-79	7 (3.4)	15 (7.3)
80-89	5 (2.4)	11 (5.3)
Age at Diagnosis		
<20	2 (1)	1 (0.5)
20-29	7 (3.4)	12 (5.8)
30-39	18 (8.7)	11 (5.3)
40-49	20 (9.7)	20 (9.7)
50-59	30 (14.5)	31 (15)
60-69	11 (5.3)	20 (9.7)
70-80	7 (3.4)	14 (6.8)
>80	0 (0)	3 (1.5)
Diagnostic Delay		
0-3 months	7 (3.4)	14 (6.8)
4-6 months	8 (3.9)	12 (5.8)
7-12 months	13 (6.3)	7 (3.4)
13-24 months	7 (3.4)	5 (2.4)
> 24 months	13 (6.3)	10 (4.8)
Unknown	47 (22.7)	64 (30.9)

Table 2. Directionality of proportional difference of clinical characteristics by ethnicity

Characteristics	Hispanic	Non-Hispanic		
Clinical Signs	**Count (%)**	**Count (%)**	**p**	**95% CI**
Gottron's sign	30 (31.6)	57 (50.9)	0.005	[-0.3247, -0.0615]
Mechanic's hands	14 (14.7)	6 (5.4)	0.023	[0.0112, 0.1763]
Colonoscopy	13 (13.7)	28 (25)	0.042	[-0.2190, -0.0072]

Results (continued)

- Hispanic patients were significantly more likely to be diagnosed at a younger age than non-Hispanic patients (48.3 vs. 52.4, p=.015).
- Clinically, Hispanic patients were significantly less likely to have Gottron's sign (p<.01), and more likely to have mechanic's hands (p=.047).
- Hispanic patients were also significantly more likely to not receive a colonoscopy (13.7% versus 25% for non-Hispanics, p=.042).
- MMF use was significantly lower in Hispanic DM patients, Hispanic patients had lower rates of ILD than non-Hispanics, however, this difference did not meet statistical significance.
- No significant difference in most clinical signs, autoantibody profiles, or malignancy rates, or ILD were seen between Hispanic and non-Hispanic patients.

Discussion

- Our study evaluating the first cohort of U.S.-based Hispanic DM patients can offer valuable insights for diagnosis, management, and addressing disparities
- In this study, Hispanic DM patients were diagnosed younger (48.3), possibly indicating earlier clinical onset. [2]
- Both cohorts had a median delay ≥3 months in diagnosis, emphasizing the need to identify delay factors. For Hispanic patients, barriers to target may include insurance gaps, low health literacy, and fears of discrimination. [3]
- Clinical differences included lower rates of Gottron's sign and higher rates of mechanic's hands in Hispanic patients, indicating potential variations in disease manifestation.
- Compared to our rate of 12.6%, Pallo et al. reported 25.9% of Hispanic/Latinx DM patients had ILD, indicating potential regional variations in ILD development or a diagnostic gap for U.S. patients. [4]
- Diagnostic gaps in cancer screenings may be reflective of other health disparities.

Conclusion

- Hispanic patients are more likely to be diagnosed at a younger age, have lower rates of Gottron's sign, and higher rates of mechanic's hands.
- No significant differences were seen in serological profiles, ILD, or malignancy rates. However, Hispanic patients were significantly less likely to receive a colonoscopy, a gap that can be considered in clinical management.

References

1. Oldroyd AGS, Callen JP, Chinoy H, et al. International Guideline for Idiopathic Inflammatory Myopathy-Associated Cancer Screening: an International Myositis Assessment and Clinical Studies Group (IMACS) initiative. Nature Reviews Rheumatology. 2023;19(12):805-817.
2. Bendewald MJ, Wetter DA, Li X, Davis MD. Incidence of dermatomyositis and clinically amyopathic dermatomyositis: a population-based study in Olmsted County, Minnesota. Arch Dermatol. 2010;146(1):26-30.
3. Mehta SJ, Morris AM, Kupfer SS. Colorectal Cancer Screening Starting at Age 45 Years-Ensuring Benefits Are Realized by All. JAMA Netw Open. 2021;4(5):e2112593.
4. Oliva Pallo PA, Hoff LS, Borges IBP, et al. Characterization of Patients With Dermatomyositis According to Anti-Melanoma Differentiation-Associated Gene-5 Autoantibodies in Centers from 3 Latin American Countries: A Cohort Study. J Clin Rheumatol. 2022;28(2):e444-e448.

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