

Racial and ethnic differences in sociodemographic, clinical, and treatment characteristics among patients with atopic dermatitis in the United States and Canada: Real-world data from the CorEvitas Atopic Dermatitis Registry

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Supplementary Table 1: Detailed definitions of disease activity measures and patient-reported outcomes

Disease activity measures (range)	
viGA-AD (score range: 0–4)	Score based on an overall assessment of the current degree of erythema, papulation/induration, oozing/crusting, and lichenification. 0 = Clear; 1 = Almost clear; 2 = Mild; 3= Moderate; 4 = Severe
EASI (score range: 0–72)	Evaluates current disease extent (surface involved in head and neck, trunk, upper extremities, and lower extremities) and clinical signs (erythema, edema/papulation, excoriation, and lichenification; each on a scale of 0–3). The final EASI score is the sum of the four region scores
SCORAD total score (range: 0–103)	The total score is based on physician components and patient components. Physician components include current disease extent (i.e., BSA) and intensity (i.e., clinical signs) of a representative area of eczema. Patient components include average itch and average sleep loss for the last 3 days or nights (0–10 VAS)
Patient-reported outcomes measures (range)	
POEM (score range: 0–28)	The POEM is a validated, reliable, and simple questionnaire for measuring atopic eczema severity in adults and children with a 1-week recall period. 0–2=clear/almost clear, 3–7=mild, 8–16=moderate, 17–24=severe, and 25–28=very severe atopic eczema
Peak pruritus NRS	Peak Pruritus NRS is a single self-reported item designed to measure peak pruritus, or 'worst' itch, over the previous 24 h. Average itch on an 11-point scale: 0–10, with 0 being “no itch” and 10 being “worst itch imaginable”
ADCT (score range: 0–24)	The tool evaluates severity of six items on a scale of 0 (no problem) to 4 (worst) over the past week. Items include overall severity of symptoms; days with intense episodes of itching; intensity of bothersomeness; problem with sleep; impact on daily activities; and

	impact on mood or emotions. A score of ≥ 7 was used as the threshold to identify patients “not in control”.
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AD, atopic dermatitis; ADCT, Atopic Dermatitis Control Tool; EASI, Eczema Area Severity Index; NRS, Numeric Rating Scale; POEM, Patient-Oriented Eczema Measure; SCORAD, SCORing Atopic Dermatitis

Supplementary Table 2. Adjusted differences summary of disease severity measures and patient-reported measures at enrollment by race/ethnicity group

Characteristics	Black, Non- Hispanic	Asian, Non- Hispanic	Other/Multiracial, Non- Hispanic	Hispanic, Any Race	P- value
	N = 167	N = 129	N = 73	N = 97	
Disease severity measures ^a					
vIGA-AD, Mean (SD)	0.08 (-0.10, 0.26)	0.22 (0.01, 0.44)	0.01 (-0.25, 0.26)	-0.02 (-0.25, 0.21)	0.30
EASI total score, Mean (SD)	2.23 (0.42, 4.05)	1.87 (-0.28, 4.02)	-0.37 (-2.93, 2.18)	0.65 (-1.65, 2.94)	0.07
EASI head and neck Erythema	-0.02 (-0.20, 0.15)	0.14 (-0.06, 0.35)	-0.02 (-0.27, 0.23)	-0.10 (-0.32, 0.12)	0.50
EASI head and neck Edema/papulation	0.03 (-0.13, 0.19)	0.26 (0.07, 0.44)	-0.05 (-0.28, 0.17)	-0.04 (-0.23, 0.16)	0.06
EASI head and neck Excoriation	0.02 (-0.13, 0.17)	0.12 (-0.06, 0.30)	0.05 (-0.17, 0.26)	-0.08 (-0.27, 0.11)	0.54
EASI head and neck Lichenification	0.21 (0.06, 0.36)	0.22 (0.04, 0.39)	0.13 (-0.08, 0.35)	-0.02 (-0.21, 0.17)	0.01
EASI trunk Erythema	0.01 (-0.17, 0.18)	0.11 (-0.10, 0.32)	-0.20 (-0.45, 0.05)	0.02 (-0.20, 0.25)	0.36
EASI trunk Edema/papulation	0.09 (-0.08, 0.25)	0.20 (0.01, 0.39)	-0.13 (-0.36, 0.09)	0.09 (-0.12, 0.29)	0.09
EASI trunk Excoriation	0.01 (-0.15, 0.16)	0.13 (-0.05, 0.32)	-0.10 (-0.32, 0.12)	-0.05 (-0.24, 0.15)	0.44
EASI trunk Lichenification	0.32 (0.17, 0.47)	0.25 (0.07, 0.43)	0.07 (-0.14, 0.29)	-0.05 (-0.24, 0.14)	<0.001
EASI upper extremities Erythema	-0.05 (-0.22, 0.12)	-0.08 (-0.28, 0.12)	-0.12 (-0.36, 0.12)	-0.05 (-0.26, 0.17)	0.82
EASI upper extremities Edema/papulation	0.04 (-0.12, 0.21)	0.07 (-0.12, 0.27)	-0.09 (-0.33, 0.14)	0.07 (-0.14, 0.28)	0.73
EASI upper extremities Excoriation	-0.05 (-0.22, 0.12)	0.15 (-0.05, 0.35)	-0.08 (-0.32, 0.16)	-0.02 (-0.24, 0.19)	0.46
EASI upper extremities	0.27 (0.09, 0.44)	0.17 (-0.03, 0.37)	-0.11 (-0.35, 0.14)	0.13 (-0.09, 0.35)	0.008

Lichenification					
EASI lower extremities Erythema	0.07 (-0.11, 0.26)	0.04 (-0.18, 0.25)	0.01 (-0.25, 0.26)	0.01 (-0.22, 0.23)	0.95
EASI lower extremities Edema/papulation	0.15 (-0.03, 0.32)	0.24 (0.03, 0.45)	0.08 (-0.17, 0.33)	0.09 (-0.13, 0.31)	0.13
EASI lower extremities Excoriation	0.04 (-0.13, 0.21)	0.13 (-0.07, 0.33)	0.14 (-0.10, 0.38)	0.07 (-0.15, 0.29)	0.65
EASI lower extremities Lichenification	0.39 (0.21, 0.57)	0.22 (0.01, 0.43)	0.04 (-0.21, 0.29)	0.09 (-0.13, 0.32)	<0.001
SCORAD total score^a	3.27 (-0.08, 6.61)	3.93 (-0.04, 7.90)	-0.35 (-5.09, 4.39)	1.79 (-2.45, 6.03)	0.12
SCORAD redness	-0.15 (-0.30, 0.01)	0.02 (-0.17, 0.20)	-0.18 (-0.40, 0.04)	-0.12 (-0.32, 0.08)	0.16
SCORAD swelling	0.02 (-0.14, 0.18)	0.21 (0.02, 0.40)	-0.10 (-0.32, 0.13)	0.05 (-0.15, 0.25)	0.16
SCORAD scratch marks	-0.05 (-0.21, 0.11)	0.15 (-0.04, 0.34)	0.05 (-0.18, 0.28)	0.04 (-0.16, 0.24)	0.51
SCORAD lichenification	0.31 (0.15, 0.47)	0.34 (0.15, 0.52)	0.04 (-0.18, 0.27)	0.11 (-0.09, 0.32)	<0.001
SCORAD oozing/crusting	-0.13 (-0.26, 0.00)	0.06 (-0.10, 0.21)	-0.10 (-0.28, 0.08)	-0.04 (-0.20, 0.12)	0.19
SCORAD dryness	0.27 (0.11, 0.43)	0.18 (-0.01, 0.37)	0.08 (-0.15, 0.30)	0.02 (-0.18, 0.22)	0.01
Patient-Reported Measures^a					
POEM	-0.15 (-1.46, 1.17)	0.06 (-1.47, 1.60)	-0.06 (-1.92, 1.79)	0.10 (-1.56, 1.76)	1.00
Worst Pruritus in past 24 hours	0.21 (-0.34, 0.76)	-0.17 (-0.81, 0.48)	-0.07 (-0.85, 0.71)	0.44 (-0.26, 1.14)	0.62
Average Pruritus in past 7 days	0.60 (0.11, 1.09)	-0.22 (-0.79, 0.36)	-0.15 (-0.85, 0.54)	0.63 (0.01, 1.26)	0.03
ADCT	0.49 (-0.65, 1.62)	-0.40 (-1.74, 0.93)	0.57 (-1.04, 2.18)	0.30 (-1.15, 1.75)	0.76
Clinical Features Present^b					
Perifollicular accentuation	1.26 (0.89, 1.78)	1.29 (0.55, 3.05)	0.92 (0.57, 1.49)	1.19 (0.54, 2.63)	0.46
Prominent head-neck involvement	1.25 (0.95, 1.64)	1.42 (1.01, 2.00)	1.15 (0.76, 1.74)	1.30 (0.87, 1.93)	0.12

Flexural lichenification	1.43 (1.03, 1.99)	1.14 (0.88, 1.47)	0.90 (0.61, 1.32)	1.26 (0.83, 1.91)	0.16
Facial erythema	0.38 (0.22, 0.67)	1.09 (0.76, 1.57)	0.96 (0.65, 1.42)	0.73 (0.39, 1.37)	0.007
Allergic shiners	2.65 (1.72, 4.07)	1.93 (1.34, 2.80)	1.88 (1.22, 2.89)	1.63 (0.84, 3.15)	<0.001
Dennie-Morgan fold	1.11 (0.50, 2.47)	1.30 (0.71, 2.38)	1.44 (0.90, 2.30)	1.06 (0.64, 1.77)	0.62

^aOutcomes adjusted for age, sex, geographic region, age of AD symptom onset, prior medications (systemic therapy, systemic corticosteroids, phototherapy, super-potent topical steroids, crisaborole, topical calcineurin inhibitors), history of asthma, history of allergic rhinitis, history of food allergies, work status and Body Mass Index (BMI). The models included random intercepts for site and provider. Estimates in reference to White patients. Statistical significance was defined as $p < 0.05$.

^bModel estimates are prevalence ratios. Clinical features were selected for analysis based on observing small differences in presence of clinical features by race/ethnicity (effect size > 0.10) and overall prevalence of $> 5\%$.

AD, atopic dermatitis; ADCT, Atopic Dermatitis Control Tool; EASI, Eczema Area Severity Index; POEM, Patient-Oriented Eczema Measure; SCORAD, SCORing Atopic Dermatitis; SD, standard deviation; vIGA-AD, Validated Investigator Global Assessment for Atopic Dermatitis

Supplementary Table 3. Adjusted summary of disease severity measures at enrollment by race/ethnicity group from mixed effects Poisson regression models (EASI severity of signs dichotomized as moderate/severe vs none/mild)

Disease severity measures ^a Moderate/severe vs none/mild	Prevalence Ratio in reference to White (95% CI)				Global P-value
	Black (non-Hispanic)	Asian (non-Hispanic)	Other/Multiracial (non-Hispanic)	Hispanic (any race)	
EASI head and neck Erythema	0.88 (0.72, 1.08)	1.05 (0.85, 1.28)	0.95 (0.66, 1.37)	0.85 (0.65, 1.11)	0.55
EASI head and neck Edema/papulation	1.07 (0.85, 1.35)	1.42 (1.10, 1.84)	0.97 (0.66, 1.44)	0.76 (0.44, 1.31)	0.06
EASI head and neck Excoriation	0.97 (0.67, 1.42)	1.09 (0.80, 1.48)	1.09 (0.78, 1.52)	0.79 (0.54, 1.15)	0.78
EASI head and neck Lichenification	1.47 (1.02, 2.13)	1.30 (0.91, 1.87)	1.11 (0.69, 1.80)	0.95 (0.54, 1.68)	0.21
EASI trunk Erythema	0.97 (0.76, 1.25)	1.07 (0.88, 1.31)	0.72 (0.51, 1.03)	1.10 (0.79, 1.54)	0.45
EASI trunk Edema/papulation	1.11 (0.85, 1.45)	1.54 (1.17, 2.01)	0.72 (0.42, 1.25)	1.23 (0.76, 1.98)	<0.001
EASI trunk Excoriation	0.92 (0.58, 1.45)	1.14 (0.82, 1.57)	0.77 (0.48, 1.22)	0.82 (0.54, 1.25)	0.10
EASI trunk Lichenification	1.50 (1.21, 1.86)	1.55 (1.15, 2.11)	1.02 (0.67, 1.57)	0.75 (0.45, 1.24)	<0.001
EASI upper extremities Erythema	0.97 (0.78, 1.20)	0.89 (0.76, 1.03)	0.90 (0.69, 1.16)	1.02 (0.83, 1.25)	0.64
EASI upper extremities Edema/papulation	1.12 (0.93, 1.36)	1.21 (1.01, 1.46)	0.87 (0.52, 1.47)	1.13 (0.87, 1.47)	0.11
EASI upper extremities Excoriation	1.00 (0.78, 1.27)	1.20 (0.96, 1.51)	0.86 (0.53, 1.39)	1.02 (0.73, 1.42)	0.21
EASI upper extremities Lichenification	1.24 (0.98, 1.55)	1.35 (1.06, 1.72)	0.88 (0.56, 1.38)	1.19 (0.88, 1.61)	0.002
EASI lower extremities Erythema	1.05 (0.87, 1.26)	0.90 (0.72, 1.13)	0.97 (0.78, 1.21)	1.02 (0.77, 1.37)	0.81
EASI lower extremities Edema/papulation	1.27 (1.04, 1.55)	1.35 (1.07, 1.72)	1.10 (0.73, 1.67)	1.21 (0.97, 1.51)	0.02
EASI lower extremities Excoriation	1.06 (0.86, 1.31)	1.09 (0.87, 1.36)	1.10 (0.84, 1.43)	1.19 (0.90, 1.56)	0.71
EASI lower extremities Lichenification	1.50 (1.19, 1.90)	1.21 (0.92, 1.58)	0.94 (0.60, 1.46)	1.22 (0.89, 1.65)	0.01
SCORAD redness	0.92 (0.78, 1.08)	0.94 (0.82, 1.06)	0.86 (0.69, 1.08)	0.98 (0.82, 1.16)	0.41

SCORAD swelling	1.10 (0.93, 1.30)	1.39 (1.14, 1.69)	0.96 (0.64, 1.42)	1.13 (0.87, 1.46)	0.01
SCORAD scratch marks	0.97 (0.75, 1.26)	1.20 (0.96, 1.49)	1.07 (0.85, 1.33)	1.03 (0.84, 1.27)	0.55
SCORAD lichenification	1.32 (1.06, 1.64)	1.53 (1.24, 1.90)	0.95 (0.70, 1.28)	1.08 (0.74, 1.57)	<0.001
SCORAD oozing/crusting	0.69 (0.38, 1.25)	1.22 (0.77, 1.94)	0.62 (0.31, 1.23)	0.99 (0.60, 1.65)	0.05
SCORAD dryness	1.21 (0.96, 1.51)	1.20 (1.01, 1.44)	1.10 (0.90, 1.34)	1.01 (0.76, 1.36)	0.19

^aOutcomes adjusted for age, sex, geographic region, age of AD symptom onset, prior medications (systemic therapy, systemic corticosteroids, phototherapy, super-potent topical steroids, crisaborole, topical calcineurin inhibitors), history of asthma, history of allergic rhinitis, history of food allergies, work status and BMI.

EASI, Eczema Area Severity Index; SCORAD, SCORing Atopic Dermatitis; SD, standard deviation.

Supplementary Table 4. Unadjusted summary of disease severity measures and patient-reported measures at enrollment by race/ethnicity group

Characteristics	White, Non-Hispanic	Black, Non-Hispanic	Asian, Non-Hispanic	Other/Multiracial, Non-Hispanic	Hispanic, Any Race
	N = 822	N = 167	N = 129	N = 73	N = 97
Disease severity measures					
vIGA-AD, Mean (SD)	2.5 (1.3)	2.6 (1.2)	2.8 (1.0)	2.7 (1.0)	2.6 (1.2)
EASI total score, Mean (SD)	11.2 (12.2)	11.6 (12.3)	12.1 (12.1)	11.6 (11.0)	10.5 (10.9)
EASI head and neck Erythema, Mean (SD)	1.0 (1.1)	0.9 (1.1)	1.3 (1.0)	1.1 (1.1)	1.0 (1.0)
EASI head and neck Edema/papulation, Mean (SD)	0.8 (1.0)	0.7 (0.9)	1.1 (1.0)	0.8 (1.0)	0.7 (0.8)
EASI head and neck Excoriation, Mean (SD)	0.6 (1.0)	0.5 (0.9)	0.8 (1.0)	0.7 (1.0)	0.5 (0.8)
EASI head and neck Lichenification, Mean (SD)	0.6 (0.9)	0.7 (1.0)	1.0 (1.0)	0.7 (1.0)	0.6 (0.8)
EASI trunk Erythema, Mean (SD)	1.0 (1.1)	1.0 (1.1)	1.1 (1.1)	1.0 (1.0)	1.1 (1.1)
EASI trunk Edema/papulation, Mean (SD)	0.8 (1.0)	0.8 (1.0)	1.1 (1.0)	0.8 (0.9)	0.9 (0.9)
EASI trunk Excoriation, Mean (SD)	0.7 (1.0)	0.6 (0.9)	0.9 (1.0)	0.7 (0.9)	0.7 (0.9)
EASI trunk Lichenification, Mean (SD)	0.6 (0.9)	0.9 (1.1)	1.0 (1.0)	0.8 (1.0)	0.6 (0.8)
EASI upper extremities Erythema, Mean (SD)	1.5 (1.1)	1.4 (1.1)	1.4 (1.0)	1.5 (0.9)	1.5 (1.1)
EASI upper extremities Edema/papulation, Mean (SD)	1.2 (1.1)	1.2 (1.1)	1.3 (1.0)	1.1 (1.0)	1.2 (0.9)
EASI upper extremities Excoriation, Mean (SD)	1.1 (1.1)	0.8 (1.1)	1.2 (1.1)	1.0 (0.9)	1.0 (1.0)
EASI upper extremities Lichenification, Mean (SD)	1.0 (1.0)	1.3 (1.1)	1.3 (1.1)	1.0 (0.9)	1.1 (0.9)
EASI lower extremities Erythema, Mean (SD)	1.3 (1.2)	1.3 (1.1)	1.2 (1.1)	1.4 (1.0)	1.3 (1.1)
EASI lower extremities Edema/papulation, Mean (SD)	1.1 (1.1)	1.1 (1.1)	1.2 (1.1)	1.2 (1.0)	1.1 (1.0)

EASI lower extremities Excoriation, Mean (SD)	1.0 (1.1)	0.8 (1.0)	1.0 (1.1)	1.1 (1.0)	1.0 (1.0)
EASI lower extremities Lichenification, Mean (SD)	0.9 (1.1)	1.2 (1.2)	1.1 (1.1)	1.0 (1.0)	1.0 (1.0)
SCORAD total score, Mean (SD)	38.5 (24.7)	39.3 (23.4)	40.0 (21.5)	39.1 (19.7)	38.6 (20.4)
SCORAD redness, Mean (SD)	1.7 (1.1)	1.5 (1.0)	1.7 (0.9)	1.7 (0.9)	1.6 (0.9)
SCORAD swelling, Mean (SD)	1.4 (1.1)	1.3 (1.1)	1.5 (0.9)	1.3 (0.9)	1.3 (0.9)
SCORAD scratch marks, Mean (SD)	1.3 (1.1)	1.0 (1.1)	1.3 (1.0)	1.2 (1.0)	1.2 (0.9)
SCORAD lichenification, Mean (SD)	1.2 (1.1)	1.5 (1.1)	1.5 (0.9)	1.3 (0.9)	1.2 (0.9)
SCORAD oozing/crusting, Mean (SD)	0.6 (0.8)	0.4 (0.7)	0.6 (0.8)	0.5 (0.7)	0.7 (0.8)
SCORAD dryness, Mean (SD)	1.5 (1.1)	1.7 (1.0)	1.6 (1.0)	1.6 (1.1)	1.3 (0.9)
Patient-reported outcome measures					
POEM, Mean (SD)	13.0 (8.2)	13.4 (8.1)	13.8 (8.2)	13.9 (8.2)	13.6 (8.6)
Worst Pruritus in past 24 hours, Mean (SD)	4.9 (3.4)	5.2 (3.5)	4.5 (3.1)	4.9 (3.4)	5.4 (3.5)
Average Pruritus in past 7 days, Mean (SD)	4.8 (3.1)	5.6 (3.1)	4.5 (2.8)	4.8 (3.0)	5.5 (3.1)
ADCT, Mean (SD)	10.1 (7.0)	10.8 (7.2)	9.9 (6.8)	11.0 (7.1)	10.6 (7.3)

AD, atopic dermatitis; ADCT, Atopic Dermatitis Control Tool; EASI, Eczema Area Severity Index; POEM, Patient-Oriented Eczema Measure;

SCORAD, SCORing Atopic Dermatitis; SD, standard deviation; vIGA-AD, Validated Investigator Global Assessment for Atopic Dermatitis