

Poor correlation between clinician-reported outcomes and patient-reported outcomes is observed in non-white patients with atopic dermatitis

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Introduction:

Atopic dermatitis (AD) manifests differently across diverse patient populations, potentially leading to challenges in its assessment and management.¹ Additionally, pigment masking may obscure erythema and other AD signs leading to misclassification of AD severity in patients with darker phototypes.^{2, 3}

Objectives:

We hypothesized that clinician-reported outcome measures may not perform as well in non-white vs. white patients. To test this, we examined whether clinician-reported outcome measures have weaker correlations with established patient-reported outcome measures across different races or ethnicities.

Methods:

A prospective, dermatology practice-based study was performed in children and adults with AD as defined by the Hanifin-Rajka diagnostic criteria. Patients were enrolled sequentially between January, 2014 and September, 2019. The study was approved by the institutional review board of Northwestern University. Informed consent was obtained electronically. Electronic surveys were completed by patients/caregivers, including self-identified race and Hispanic ethnicity, Numerical Rating Scale (NRS) for average-itch in the past 7 days, and Patient Oriented Eczema Measure (POEM). Investigator assessments of AD severity were performed by a dermatologist (J.I.S.) and included Eczema Area and Severity Index (EASI), and objective component of SCORAD (oSCORAD). Spearman correlations were performed for POEM and NRS-itch vs. oSCORAD and EASI. Correlation coefficients were interpreted as:

≥ 0.70 or ≤ -0.70 =very strong, 0.50 to 0.69 or -0.69 to -0.50=strong, 0.30 to 0.49 or -0.49 to -0.30=moderate, and 0.10 to 0.29 or -0.29 to -0.10=weak⁴

Results:

Overall, 1987 patients were included in the study (age <18yr: 101 [5.08%], ≥ 18 yr: 1886 [94.92%]), including 198 (9.96%) Black, 360 (18.12%) Asian, 8 (0.40%) Multiracial/Other, 1313 (66.08%) White race, and 108 (5.44%) Hispanic ethnicity. In white patients, POEM and NRS average-itch had strong correlations with oSCORAD and EASI. Whereas in black patients, POEM had only moderate correlations with oSCORAD and EASI NRS average-itch had weak-moderate correlations with oSCORAD and EASI. Asian/Pacific Islander patients also had numerically weaker correlations of POEM with oSCORAD and EASI compared to white patients, but strong or very strong correlations of NRS average-itch with oSCORAD and EASI. Patients with Hispanic ethnicity also showed weaker correlations for POEM with oSCORAD and EASI compared to whites, as well as weaker correlations of NRS average-itch with EASI.

Conclusions:

The modest correlation observed between PROMs and clinician-reported outcome measures in general highlights the importance of measuring both signs and symptoms to fully describe severity of AD. This is particularly important in non-white patients who had notably weaker correlations between PROMs and clinician-reported outcome measures. The poor correlation between patient-reported outcome measures and clinician-reported outcome measures may be multifactorial, including pigment masking limiting assessment of erythema and other AD signs in patients with darker phototypes³, more severe pruritus and morphologic variants occurring in blacks and Asians/Pacific Islanders that may not adequately be represented in oSCORAD and EASI. AD severity is often underestimated in patients with darker phototypes.³ Future efforts are needed to optimize clinician assessments of AD severity in diverse patient populations.

Keywords:

atopic dermatitis; eczema; severity; race; diversity

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