Development of an Eczema Area and Severity Index (EASI) lesional severity atlas for diverse skin types

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Introduction: The Harmonizing Outcome Measure for Eczema group recommends the Eczema Area and Severity Index (EASI) as the preferred outcome measure for atopic dermatitis (AD) signs. However, there is limited EASI score guidance in skin of color (SOC) and limited evidence for the validity or reliability of EASI in patient populations with higher skin phototypes. Clinical signs of AD manifest differently across skin types, which complicates reliable assessment of AD severity overall and EASI in particular. However, current guidance for EASI implementation is limited to lighter skin photootypes. To address these issues, we developed an EASI lesional severity atlas and refined guidance for investigators and clinicians to use across diverse patient populations.

Methods: A review was performed of clinical images from internal AD photo-repositories. Representative images of the 4 AD signs included in EASI were selected for different physician-assessed skin phototypes. Images were excluded if they had low-resolution, poor focus or lighting. Discrepancies regarding skin pigmentation and AD severity were resolved by consensus between all authors.

Results: Over 3,000 clinical photos were reviewed. Final images were selected using an iterative review process and consensus. Two different versions of the atlas were created across a range of 6 different physician-assessed phototypes (I-VI) and 3 different skin complexions (light, medium, dark). Additionally, we propose modification to the guidance language for erythema to reflect the range of colors encountered across different skin complexions (shades of red, purple and brown).

Conclusion: We created a lesional severity atlas and updated guidance language for implementing EASI in diverse populations, including those with higher skin phototypes. Clinicians and investigators may refer to this atlas to improve the reliability of EASI and other AD severity assessments, especially for patients with richly pigmented skin. Future studies are needed to establish the efficacy of this atlas at improving EASI assessment.