How to measure itch in atopic dermatitis?

DOI: 10.1111/bjd.19225

What is the best way to measure the negative influence of a disease on an individual? For many illnesses this is currently investigated in working groups that involve professionals and patients to obtain consensus. For atopic dermatitis (AD), the Harmonizing Outcome Measurements in Eczema (HOME) group ponders this question.1 The group initially recommended the use of the Patient-Oriented Eczema Measure (POEM) for measurement of AD symptoms in clinical trials.2 However, itch is a hallmark symptom of AD, and it has been shown that a simple singe-item numerical rating scale (NRS) for itch correlates equally to or even more strongly with a general measure of AD severity (the question ‘Would you describe your atopic dermatitis or eczema as mild, moderate, or severe?’) than does the POEM.3,4 Following a validation study by Yosipovitch et al., an 11-point NRS-itch, specifying a recall period of 24 hours with a qualifier for itch, the peak (worst) itch, was incorporated into the HOME core outcome set for trials.5,6 The newly formed ‘HOME in clinical practice initiative’ also intends to address itch. However, before their most recently published meeting, peer-reviewed validation studies for an NRS-itch instrument in AD had not been published.7

In this issue of the BJD, Silverberg et al. report on the measurement properties of the Patient-Reported Outcomes Information System (PROMIS™) Itch Questionnaire (PIQ)–itch severity assessment.8 They studied an NRS and verbal rating scale (VRS) for worst and average itch in the past 7 days, along with an assessment of frequency of itch during that period. From their comprehensive and methodologically sound validation study, the authors conclude that NRS and VRS for worst and average itch, and frequency of itch each have slight advantages over the other for different aspects of validity. They suggest that NRS for ‘worst itch’ is the preferred question to be used as a standalone, combined with frequency of itch and/or VRS for ‘worst itch’ wherever feasible.

The most profound differences between the studies of Yosipovitch et al. and Silverberg et al. are the recall period (24 hours vs. 7 days) and the fact that participants indicated a preference for peak/worst itch, as opposed to average itch. Also, the study group differed: patients included in dupilumab trials for moderate-to-severe AD vs. patients with all AD severities treated according to daily practice. This means that the studies are not directly comparable. Therefore, choosing one instrument over the other is difficult. For the ‘HOME in clinical practice initiative’ this is not an issue. The initiative aims to create a ‘pick-and-choose’ list of properly validated and feasible instruments to use for the measurement of a particular domain, which may very well result in the inclusion of both instruments in the clinical practice set. An important addition to this is that potential users should be guided to use the set of available interpretability values (severity strata and minimal clinically important difference/minimal important change) that matches the NRS of their choice.

Meanwhile, although the subjective experience of the patient is important, objective measurement should certainly not be ruled out as a feasible option to assess itch, particularly in clinical trials. Tools within the realms of acoustic surveillance, wrist actigraphy, smart devices and neurological imaging all have their pros and cons. Further development is needed, as well as the identification of biomarkers that correlate with itch.9

Acknowledgments: the author would like to acknowledge Angelique Voorberg, MSc, for her critical revision of this commentary.

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Conflicts of interest: the author declares he has no conflicts of interest.

References
1. Schmitt J, Williams H, HOME Development Group. Harmonising Outcome Measures for Eczema (HOME). Report from the First International Consensus Meeting (HOME 1), 24 July 2010, Munich, Germany. Br J Dermatol 2010; 163:1166–8.
2. Spuls PI, Gerbens LAA, Simpson E et al. Patient-Oriented Eczema Measure (POEM), a core instrument to measure symptoms in clinical trials: a Harmonising Outcome Measures for Eczema (HOME) statement. Br J Dermatol 2017; 176:979–84.
3. Vakharia PP, Chopra R, Sacotte R et al. Validation of patient-reported global severity of atopic dermatitis in adults. Allergy 2018; 73:451–8.
4. Silverberg JI, Margolis DJ, Boguniewicz M et al. Validation of five patient-reported outcomes for atopic dermatitis severity in adults. Br J Dermatol 2020; 182:104–11.
5. Yosipovitch G, Reaney M, Mastey V et al. Peak Pruritus Numerical Rating Scale: psychometric validation and responder definition for assessing itch in moderate-to-severe atopic dermatitis. Br J Dermatol 2019; 181:761–9.
6. Harmonising Outcome Measures for Eczema (HOME). HOME VII Meeting 2019. Available at: www.homeforeczema.org/meetings-and-events/home-vii-meeting-2019.aspx (last accessed 14 May 2020).
7. Leshem YA, Chalmers JR, Apfellbacher C et al. Measuring atopic eczema symptoms in clinical practice: the first consensus statement.
from the Harmonising Outcome Measures for Eczema in clinical practice initiative. J Am Acad Dermatol 2020; 82:1181–6.

8 Silverberg JI, Lai J-S, Patel K et al. Measurement properties of the Patient-Reported Outcomes Information System (PROMIS®) Itch Questionnaire: itch severity assessments in adults with atopic dermatitis. Br J Dermatol 2020; https://doi.org/10.1111/bjd.18978. [Epub ahead of print].

9 Smith MP, Ly K, Thibodeaux Q et al. Emerging methods to objectively assess pruritus in atopic dermatitis. Dermatol Ther (Heidelb) 2019; 9:407–20.