

Comparing apples, oranges and atopic dermatitis

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Despite the high prevalence, no universal definition exists for atopic dermatitis and the numerous nomenclatures (e.g. atopic dermatitis or 'eczema') makes classification even more complicated.¹ Morphologically, atopic dermatitis may have a wide range of presentations and may fluctuate significantly over time.² Several clinical diagnostic criteria have been proposed based on typical presentation, for example itchy skin rash and flexural involvement.³ However, such criteria have limitations and are primarily designed for paediatric populations, and while they may have varying applicability and validity in different populations, they may be even less applicable for adults. Furthermore, when used in questionnaire settings, many of the proposed criteria are unspecific, in turn leading to misclassification bias. Is it: atopic eczema (i.e. atopic dermatitis), allergic eczema (e.g. contact dermatitis), simple xerosis or is it a completely different skin disease, for example psoriasis? Fluctuations in disease activity may further cause recall bias of symptoms, severity and triggers, especially in patients currently in remission.

Clinical and epidemiological studies depend on valid case definitions. The current heterogeneity in the definition of atopic dermatitis, however, reduces comparability and reproducibility across different studies. For example, different sets of criteria may produce different prevalence estimates of atopic dermatitis within the same population. Inaccurate disease definitions can furthermore influence study results, consequently polluting the collective body of evidence. Some definitions, such as the U.K. Working Party Criteria may be suitable for research in selected areas. However, use of these criteria in settings other than those for which they were designed, or use of modified versions (e.g. variation in the phrasing of the individual criteria when used in surveys) may yield biased estimates and identify patients with diseases other than atopic dermatitis.

In this issue of the BJD, Nakamura and colleagues investigate the consequence of inaccurate classifications of atopic dermatitis.⁴ They reviewed the atopic dermatitis definitions used in current literature and tested the impact of using different definitions in two birth cohorts. Based on 59 operational definitions of atopic dermatitis across 45 studies, they report a noticeable definitory heterogeneity. By applying four commonly used questionnaire-based atopic dermatitis definitions the authors found that the prevalence of atopic dermatitis ranged between 22% and 30% in one cohort and 12% and 22% in another. Furthermore, the authors found that the estimates

of association between atopic dermatitis and FLG mutations, a well-established genetic risk factor for atopic dermatitis, were significantly different depending on the applied definitions of atopic dermatitis.

Findings from the study by Nakamura et al. demonstrates that epidemiological associations may be significantly influenced by atopic dermatitis 'case' and 'control' definitions in children. Similar discrepancies have previously been demonstrated when investigating comorbidities in adults with atopic dermatitis, emphasizing the need for a more uniform terminology and disease definition.⁵ Indeed, the current study sheds light on an important challenge in current atopic dermatitis research. The substantial heterogeneity in currently applied atopic dermatitis definitions should raise concern as to whether questionnaire-based definitions can be used for studies of atopic dermatitis at all. And even if some of them can, a definition suitable in, for example, a cohort study may not work for studies of disease prevalence, severity or activity.

Conflicts of interest

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Herlev and Gentofte Hospital, University of
Copenhagen, Kildegårdsvej 28, 2900
Hellerup, Denmark
E-mail: yuki.maria.fukuda.andersen.01@
regionh.dk

Y.M.F. ANDERSEN 
A. EGEBERG 

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