

CORRESPONDENCE

Atopic dermatitis: The importance of future research in Africa

To the Editor,

We have read with great interest the study of Lunjani et al.¹ in which they investigated the impact of diverse environmental and socioeconomic factors on atopic dermatitis (AD) immune endotypes in children living in South Africa. They identified reduced levels of IL-17A in the plasma of children with AD in comparison to healthy controls. Furthermore, the study highlights the impact of environmental exposures (such as nutrition or animal contact) on the immune system and the development of AD endotypes.

Atopic dermatitis is not only one of the most frequent chronic inflammatory skin diseases in Western countries, but, as shown recently, also in Sub-Saharan Africa.² However, there is a lack of studies investigating AD and other diseases of the atopy spectrum in Sub-Saharan Africa. The clinical presentation of AD varies considerably depending on the patient's ethnicity. This may not only be due to the genetic background but also to environmental factors. Little is known about the differences in pathogenesis underlying these various immune endotypes. It is important to gain further insights into these varieties in order to use new and upcoming AD therapy regimens more specifically. An interesting study conducted by Brunner et al.³ has shown that filaggrin (FLG) mutations were less common in African American as compared with European American AD patients. This finding is supported by a more recent study showing that the gene expression of FLG is not significantly downregulated in Tanzanian AD patients compared to healthy controls.⁴ Furthermore, both studies suggest that Th1/Th17 pathways could play a less important role in African (American) AD skin. In our work, however, we identified higher serum levels of pro-inflammatory Th1/Th17 cytokines in Tanzanian AD patients compared to Swiss AD patients.⁵ Besides the divergence between the immune signatures, environmental exposures which can translate to sensitizations/allergies considerably differ among AD patients depending on their origin and environment. We found major differences in sensitization patterns to food- and yeast-antigens in AD patients in Tanzania compared to Switzerland,⁵ and Berghi et al. describe the increasing importance of *Solanum melongena* (eggplant) allergy in Europe. Eggplant is mainly produced in Africa, Asia, India, and China and makes migrants from these regions much more likely to be sensitized.⁶ We would like to highlight the importance of considering not only

a patient's current living situation but also his country of origin when performing allergological workups.

The above-mentioned findings underline the need to further explore AD immune endotypes on both a cutaneous and a systemic level. Differences between rural and urban settings as observed by Lunjani et al. might be an additional important factor.¹ The existence of regional variations within Africa was also suggested in a recent WHO Position Statement on Atopic Dermatitis in Sub-Saharan Africa.²

To explore how genetic, immunological, and environmental factors impact AD in Sub-Saharan Africa as opposed to Central Europe, we currently perform a prospective observational study with comprehensive biosample collection of AD patients and non-atopic controls from Tanzania and Switzerland (ClinicalTrials.gov ID: NCT05363904). Further studies will hopefully shed more light on this still largely unexplored area. The study of Lunjani et al.¹ demonstrates that it will be crucial to consider environmental aspects in these studies.

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CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest.

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