

SHORT COMMUNICATION

Hand Eczema in Africa: Clinical Findings and Experiences from South-West Uganda

Stephen K. Mirembe^{1,2}, Grace K. Mulyowa², Gerold Jaeger², Robert Ofenloch¹, Thomas L. Diepgen¹ and Elke Weisshaar^{1*}¹Department of Clinical Social Medicine, Occupational and Environmental Dermatology, Ruprecht Karls University, University Hospital Heidelberg, Thibautstr. 3, DE-69115 Heidelberg, Germany, and ²Department of Dermatology, Mbarara University of Science and Technology, Mbarara, Uganda. *E-mail: elke.weisshaar@med.uni-heidelberg.de

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In Western countries hand eczema (HE) is a common skin disease, which is often chronic and/or relapsing, with a point prevalence of 1–5% and a 1-year prevalence of 10%. However, there is little information about the prevalence and clinical characteristics of HE in Africa (1, 2). Usual living conditions in Africa can be responsible for eczema, e.g. irritant HE, e.g. the use of cooking fuels, or the availability of running water and a formal house (3). The use of metal for tribal decorations and work tools, increase the risk of allergic HE (4). Limited automation and lack of body protection, together with low-level technologies, e.g. the use of a hand hoe, chemicals and hand milking in agriculture or hand welding in the small metal industries, lead to exposure of the hands in many occupations. There is increasing interest in eczema research in Africa, with studies on atopic eczema (AE) showing an increasing prevalence and incidence of AE (5, 6).

The aim of this observational study is to report on HE patients from the Mbarara University skin clinic, which is the only one in Western Uganda and the only dermatology training centre in Uganda.

MATERIALS AND METHODS

Patients attending the skin clinic in Mbarara, Uganda with a clinical diagnosis of HE, from June to September 2013 and June to October 2014 were included in the study. Inclusion criteria were a clinical diagnosis of HE, minimum age 18 years, and informed consent to provide the data for this analysis. The study was approved by the Institutional Review Board (IRB) of Mbarara University.

Sociodemographic characteristics, such as age, sex, tribe, residence and occupation, were assessed. The duration and course of HE were documented. Erlanger Atopic score criteria were used to assess atopic skin diathesis (7). A score of at least 10 marked positive atopic skin diathesis. Previous treatments were documented and grouped according to topical treatments, including emollients, corticosteroids, immunomodulators, ultraviolet (UV) phototherapy and systemic treatments (e.g. corticosteroids, antihistamines).

HE was classified by 2 independent dermatologists trained together according to a recent and practicable HE classification system (2). The following diagnoses were made: atopic HE, irritant contact dermatitis of the hands, allergic contact dermatitis of the hands, mixed form of one of those, hyperkeratotic-rhagadiform of the genuine type and dyshidrosiform HE of the genuine type. The HE severity index (HECSI) was used, with zero score meaning no lesions up to a maximum score of 360 (8). Four clinical aspects (distribution, frequency, severity and sleep disturbance) were used to grade pruritus into mild, moderate and severe (9).

Patch-test substances and material from SmartPractice, Germany and Chemotechnique, Sweden were used. Patch-testing was performed on the back according to the recommendations of the German Contact Dermatitis Society (DKG).

Data were collected using clinical forms, entered using Microsoft Access and analysed using IBM SPSS-20. Descriptive analysis of differences in absolute and relative frequency of categorical data was carried out. Interval scaled data is reported as means and standard deviation.

RESULTS

The patients' demographic characteristics ($n=64$) are shown in Table SI¹. The clinical characteristics are shown in Table SII¹; 55.8% had atopic skin diathesis and 75% presented with moderate pruritus. Almost 80% had had HE for less than one year, whereas 20% had had HE for more than one year. Atopic HE was the most frequent type of HE. Fifty-four percent of the Ugandan sample underwent a patch-test, and, of these, 76.5% were found to be sensitive to one or more contact allergens. The most common contact allergens were nickel-(II)-sulphate (29.4%), fragrance mix (26.5%) and composite mix (14.7%) (Table I). Fig. S1¹ shows the treatment profile, with topical corticosteroids and systemic antihistamines as the most frequently prescribed.

DISCUSSION

This is the first report of its kind about patients with HE in Africa. The Ugandan sample was much younger compared with other studies (1, 2, 10). Whereas the mean age is approximately 44 years in, for example, German studies, a mean age of 29 years may be representative for patients with HE in Uganda (10). In contrast to other studies, women in Uganda were more affected than men (10). Sixty-six percent of the Ugandan patients suffered

¹<https://doi.org/10.2340/00015555-2246>Table I. Frequency of the most common positive patch-test reactions in the Ugandan hand eczema patients ($n=34$)

Patch-test substance	<i>n</i> (%)
Nickel (II) sulphate,*6H ₂ O	10 (29.4)
Fragrance-mix I	9 (26.5)
Composite mix	5 (14.7)
Peru balsam	5 (14.7)
Wool alcohols	4 (11.8)
Cetylstearyl alcohol	3 (8.8)
Thiuram mix	3 (8.8)
Propolis	3 (8.8)
p-tert,-butylphenol-formaldehyde	3 (8.8)

from AE also involving the hands which was higher than in Western countries (1, 2, 10). Most HE in Ugandan patients occurred in gardeners, students, business people, housewives and cattle keepers. Some of these professions involve both occupational risk and awareness and sensitization of workers to seek dermatological care, a factor that tends to occur with a higher level of education and profession in Uganda (11). This distribution was significantly different from that seen in studies from Germany, where most HE occurs among workers in the metal industry, healthcare, mechanics and the construction industry (10). Interestingly, none of the Ugandan patients worked in the construction industry or was a healthcare worker, despite the emerging construction boom and increasing use of materials such as paint and cement in Uganda. Potassium dichromate, a key constituent of cement, appears to be a common type-IV allergen in other African countries, but this was not confirmed for Uganda in our study (12). Sensitization to nickel-(II) sulphate was, as in studies from Europe, very frequent and the most frequent contact allergen in the Ugandans. Interestingly, fragrance mix was also identified as a frequent contact allergen in Uganda. A patch-test study performed in Ethiopia showed comparable results to that of Uganda, with p-tert-butylphenol-formaldehyde, fragrance-mix I, nickel-(II)-sulphate, and wool alcohols, common to both populations (13). In Cotonou, Benin it was found that women are more exposed and reactive to fragrance mix and formaldehyde (14). It is notable that, in our patients, the diagnosis “allergic contact dermatitis of the hand” was made only if the identified contact allergen explained the origin of HE.

In the Ugandan sample, atopic HE, irritant contact HE and HE of mixed forms occurred most commonly. HE of mixed origin and irritant contact HE were the most frequently reported in Germany (10), which can be explained by the long disease courses of German HE patients. A score of 30.8 ± 17.8 on the HECSI may be representative for the Ugandan sample in the absence of comparable data. Pruritus is a common symptom in Ugandan skin diseases, which, in some situations, may be the only presenting symptom; a finding that was in agreement with an earlier study (15).

Limited treatment options and limited access to the healthcare system, as well as dermatology being a newer discipline, influence the treatment characteristics in Uganda, which, in our study, mainly included topical corticosteroids, emollients and antihistamines.

We believe our results demonstrates that HE is a prevalent skin disease in Uganda and occurs mainly in patients with AE also involving the hands. The difference between Uganda and, for example, Germany, may partially be explained by the different industrial situation in these countries, the lower life expectancy in Uganda (52 years in men in Uganda) and significantly older patients working in manual professions in Western countries.

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