ABSTRACT BOOK ABSTRACTS



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ATOPIC ECZEMA/DERMATITIS

SKIN HYDRATION IN ADULT ATOPIC DERMATITIS USING CORNEOMETRY

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Introduction: One of the key pathophysiological features of atopic dermatitis (AD) is skin barrier dysfunction. This dysfunction results in increased transepidermal water loss and easy penetration of allergens, bacteria and viruses, in both lesional and non-lesional skin. Hydration status of the stratum corneum is important for the proper function and appearance of the skin. In AD, increased transepidermal water loss leads to reduced stratum corneum hydration, which then, clinically manifests as xerosis and pruritus. The detection of xerosis in AD, for research purposes should best be determined through objective means. One of the validated methods, an example of bioengineering techniques, which has been developed to diagnose and monitor this biophysical parameter, is the stratum corneum layer (corneometry) and transepidermal water loss (TEWL). Studies from Nigeria on the skin hydration of AD patients are quite few. The aim of this study is to assess skin barrier function of AD patients by measuring their stratum corneum hydration and compare with that of non-AD subjects.

Methods: This study was conducted between January and September 2016 at the dermatology clinic of the University of Abuja Teaching Hospital (UATH); following ethical approval by the UATH Ethics Committee. One hundred subjects were recruited for the study. There were 50 AD patients and 50 age-matched healthy controls. The inclusion criteria were age greater than 18 years, clinical diagnosis of AD as defined by the UK working group. Information obtained included socio-demographics and perceived factors affecting skin hydration such as types of bathing soaps or cleansers used in the last two weeks. Patients and controls were asked to only wash their bodies with soap and water on the morning of the test and not apply body moisturizer to avoid measuring the water content of the moisturizer. Skin hydration was measured on the unaffected volar aspect of upper arm or forearm using the CM 825 (Courage and Khazaka) corneometer. This corneometer is non-invasive and measures electrical capacitance of the skin surface and thus, the hydration to a depth of approximately 0.1mm. With the patient relaxed, the skin hydration was measured on non-hairy area by placing the Corneometer perpendicular to the skin. Measurements were done on three neighbouring areas over one second each ensuring that no spot was measured twice to avoid occlusion and the average taken. The result was





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shown digitally on a screen which indicated the hydration status. A value of less than 30 was measured as "dry" and greater or equal to 30 was reported as non-dry. Data was analysed using SPSS Version 21. P value of <0.05 was considered as statistically significant.

Results: There were 28 females (56%) and 22 males (44%) respectively for both patients and control groups with a sex ratio of 1.3:1.0 (F: M). The age range of the subjects was between 18-65 years with a mean age of 42.12 ± 10.94 years. The mean hydration value in AD patients was 21.6 ± 17.4 while that for healthy control was 29.8 ± 13.5 . This difference was statistically significant at a p value of 0.01. The proportion of AD patients categorized as having dry skin was 78% while that for healthy controls was 50% (p-value=0.004). Majority (79.6%) of respondents used 'normal' bathing soaps, while 9(18%) and 2(4%) used Syndet and lipid-free liquid cleansers respectively.

Conclusion: This study has objectively shown AD patients to have dry skin as compared to controls. This supports available literature that suggests xerosis as a prominent and key finding in AD. Xerosis is not influenced by race or location. The non-frequent use of syndet and lipid-free liquid soap; which are less likely to distort the skin acid mantle and invariably the skin barrier function may also contribute to this effect. It is thus recommended that, the need for moisturization should be emphasized in our atopic dermatitis patients through continuous and vigorous health education.





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