

P062 | Across the Skin Depths: Increased Absolute Levels of Bacteria within Atopic Dermatitis and Psoriasis, but not Chronic Spontaneous Urticaria

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Introduction: Atopic Dermatitis (AD), Psoriasis, and Chronic Spontaneous Urticaria (CSU) are inflammatory skin diseases with different suspected pathogenesis. AE and Psoriasis have been previously associated with microbiome changes, while little is known about CSU. Furthermore, the microbiome changes across the different skin layers (epidermis and dermis) for these three skin diseases are under-examined.

Method: To investigate the skin's microbial load across its layers, tape strips (TS) 2 and 20 were used to sample 64 adults (28 healthy participants, 14 AD, 5 Psoriasis, and 17 CSU patients). For a subgroup of 6 AD and 7 HE participants, TS40, TS60, and TS80 were used to observe changes past the stratum corneum. Lesional and non-lesional samples were collected from AE and psoriasis participants. Absolute quantification of bacteria was measured by qPCR of the 16S rRNA gene.

Results: The bacterial load decreased with increasing depth of the tape strip, regardless of the skin's health status. Compared to healthy samples, at the skin's surface (TS2), the bacterial load was higher among AD and psoriasis lesions but not CSU samples. Only within the stratum corneum (TS20) did AD and psoriasis nonlesional skin have a significantly higher bacterial load than healthy samples. Absolute bacterial abundance correlates to skin pH only in healthy individuals.

Conclusion: By absolute quantification, we could show that high skin pH and diseased skin (AD, psoriasis) are associated with higher bacterial burden. Thus, absolute quantification provides crucial supplementary information for nextgeneration sequencing.