Cardiovascular risk in atopic eczema is only associated with active disease in adulthood

M Y C, A K Mullick, R Silverwood, C E McCulloch, D Margolis, D Strachan, H Williams, SMTangan1 and K Absaruba1 LUSFM, London, United Kingdom. Multiple studies suggest an increased risk of cardiovascular disease among patients with atopic eczema (AE) as compared to healthy controls, but there are limited data on which AE patients might be at highest risk. The objective of this study was to examine whether subtypes of AE based on patterns of disease activity from birth are associated with cardiovascular risk in mid-adulthood. We used data from the 1958 National Child Development Study and 1970 British Cohort Study, which are longitudinal cohort studies nationally representative of the United Kingdom (UK) population that follow over 17,000 individuals from birth. We assessed cardiovascular risk at age 46-50 using the QRS3 score, which is a well-established cardiovascular risk score similar to the Framingham risk score developed for use in the UK. We compared cardiovascular risk (both a continuous score and a binary outcome of ≥5%) between the 3 previously identified AE subtypes based on the course of self-reported symptoms at 5-8 time points since birth using regression models adjusted for sex, ethnicity, social class in childhood, and cohort. We found that individuals with AE were at increased cardiovascular risk compared to individuals with no AE, and the risk varied by AE subtype. There was no difference in cardiovascular risk relative to individuals with no AE for those in the ‘decreasing’ probability of AE over time subtype (OR 0.97, 95% CI 0.80-1.19), but the ‘high’ probability of AE over time (OR 1.62, 95% CI 1.27-2.06) and ‘increasing’ probability of AE over time (OR 1.94, 95% CI 1.66-2.26) subtypes were associated with an increased likelihood of ≥5% risk of heart attack or stroke over the next 10 years. In conclusion, these data suggest cardiovascular risk is highest among those with increasingly active AE in adulthood, a newly identified AE subtype that warrants more attention in future research.

Large scale epidemiological analysis of common inflammatory skin diseases to identify shared and unique comorbidities and demographic factors

Q Li, MF Patrick, S Serekkadanajan, JM Kahlenberg, IE Gudjonsson, K Kang, Z He1 and TD Treas1 Biostatistics, University of Michigan, Ann Arbor, Michigan, United States and 2 Michigan Medicine, University of Michigan, Ann Arbor, Michigan, United States. Inflammatory skin diseases are amongst the most common but yet inherently heterogeneous group of diseases. In this study, we utilized a claim-based EHR dataset, Optum, of >3 million patients who had at least one common skin disease (atopic dermatitis, psoriasis, alopecia areata, vitiligo, and acne) or skin-related disorder (psoriatic arthritis [PsA] and systemic lupus erythematosus [SLE]) to carry out an epidemiological analysis to identify shared and unique comorbidities of the different skin conditions and evaluate the trend and the strength of the associations. We modeled disease associated variables using 41 comorbidities (type 2 diabetes [T2D], cardiovascular diseases, inflammatory bowel disease [IBD], and demographic and socioeconomic status). We identified on average 5 consistent comorbidities across all five skin diseases, and 6 and 19 for PsA and SLE, respectively. Ankylosing spondylitis, Crohn’s disease, and hypothyroidism were the three most common comorbidities for skin diseases. SLE had prominent association with cardiovascular diseases (OR=1.34 to 3.26), while PsA and psoriasis had the strongest associations with T2D. The strongest comorbidity association was between SLE and scleroderma (OR=9.59; p<0.0001) among skin-related disorders, and between vitiligo and melanoma (OR=2.14; p<0.001) among skin diseases. Furthermore, socioeconomic status was found to have disease specific effect, and demographic information was a significant factor across multiple skin conditions. Thus, income levels were positively associated with atopic dermatitis and acne, while there was no association with PsA. These data on skin disease comorbidities will positively impact prediction of patients' future medical conditions, facilitate development of individualized health care, and optimize clinical management.