SATURDAY

217 Extensive serum proteomics in Atopic Dermatitis Subjects reveals novel proteins and pathways relevant for severe disease

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RATIONALE: Atopic Dermatitis (AD) is a prevalent inflammatory skin disorder exhibiting significant heterogeneity in its pathogenesis and clinical presentation. Investigations of serum biomarkers is valuable to better understand the underlying molecular mechanisms that distinguish mild and severe AD cases.

METHODS: Sixty-seven adult subjects enrolled at URMC as part of Atopic Dermatitis Research Network Registry (ADRN02) were classified as mild (n=33; EASI≤7) or severe (n=34; EASI≥20). Serum proteomic analysis was performed using Olink Explore 3072. Differentially expressed proteins (DEPs, mild vs severe) were identified using independent t-tests and False Discovery Rate correction (FDR). HPAStainR and StringDB were used for enrichment pathway analysis. Pearson Correlation analyses determine associations of biomarkers with relevant clinical parameters (FDR≤0.05 and r≥0.6).

RESULTS: 469 DEPs (FDR≤ 0.05) were identified between mild and severe AD, with 46 downregulated and 423 upregulated in severe cases. HPAStainR matched 233 of DEPs in the "Skin Epidermal" category. StringDB of the DEPs revealed significant (FDR≤0.01) association with terms related to cornification, protease activity, defense responses to gram-positive bacteria, and innate immune responses. Distinct markers correlated with EASI scores (e.g. CCL17, IL22, GPR15L, CCL22), eosinophil (CLC, EZR, THOP1, RNASE3) or neutrophil (S100A12, ARG1, MMP8, PRTN3 DEFA1), and associated with elevated absolute eosinophil and neutrophil counts in the blood of severe AD (FDR≤0.05).

CONCLUSIONS: This study presents a large-scale proteomic analysis of serum from well-characterized AD patients. It broadens our knowledge on the systemic nature of severe AD, unveils a large number of unreported serum proteins, and points to a strong skin epidermal signature in severe AD serum.

218 Exploring the association between Adverse Childhood Experiences and atopic dermatitis

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RATIONALE: Adverse childhood experiences (ACEs) represent a range of trauma and adversity that lead to toxic stress during childhood, increasing risk of negative health outcomes. While ACEs have previously been associated with atopic dermatitis (AD), we sought to understand which ACEs are associated with AD.

METHODS: We analyzed data from the 2021 National Health Interview Survey (NHIS), which uses complex sampling to reflect national estimates. We included all children with complete data. We examined the association between ACEs (binary: 0-1 vs >1) and AD using multivariable logistic regression models adjusted for demographics, including age, sex, race, insurance, and ratio of family income to poverty threshold. Responses from 7 survey questions were used to categorize ACE exposure.

RESULTS: Our sample consisted of 7,969 children aged 0-17 years old. One-thousand one-hundred and forty-five children reported having AD. Seven-thousand three-hundred and sixty-two children were exposed to 0-1 ACE and 607 children were exposed to >1 ACE. In an adjusted analysis, having >1 ACE was associated with a 1.69-fold increased odds of AD (95% CI: 1.29, 2.21, $P<.001$). Being a victim of witnessed violence, ever being separated from a parent who was incarcerated, ever having lived with anyone mentally/severely depressed, ever having lived with anyone with an alcohol/drug problem and being treated/judged based on race/ethnicity were each significantly associated with atopic dermatitis ($P<.05$) in an unadjusted analysis.

CONCLUSIONS: Two or more ACEs and ACEs relating to violence, parental incarceration, bias, and living with someone with mental health or substance use issues were associated with AD in children.

219 Knowledge and satisfaction about the use of Patient Reported Outcomes Measures (PROMs) by patients with chronic urticaria

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RATIONALE: In many situations, the use of PROMs in clinical practice is restricted by barriers that the doctor considers, such as the patient's dislike of filling out PROMs, time constraints, etc. That is why our aim is to assess patients' level of knowledge and level of satisfaction with the use of PROMs in chronic urticaria (CU).

METHODS: This is a cross-sectional study using an online survey that was distributed by physicians to patients with CU from UCARE, ACARE, and ADCARE networks. Descriptive analysis was performed for all questions in the questionnaire: mean and standard deviation for quantitative variables and frequency and percentage for categorical variables.

RESULTS: The study comprised 65 participants, the majority of whom were between the ages of 25 and 40. When measuring knowledge, 6 out of every 10 participants reported that their understanding of PROMs was based on information supplied by their physician. 40% of those polled expect PROMs to have the ability to inform about the disease's severity and management. When questioned about PROMs' evaluation of treatment impact, 83% correctly replied, and 90% correctly recognized PROMs acquire patients' own perceptions of their health state. In terms of satisfaction, the average score for continuing to use PROMs was 4.38.

CONCLUSIONS: Our data indicate that patients with CU are very satisfied with PROMs and expect them to help them manage their condition. These early findings suggest that while employing PROMs in clinical practice, clinicians should include patients' viewpoints before thinking on the possible barriers to their use.