381 Lower Likelihood of Allergist Evaluation for Black Children with Atopic Dermatitis Despite Increased Risk of Asthma

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RATIONALE: Recent literature examining racial differences in the atopic march shows high risk of asthma in Black children. We aim to deepen this understanding by exploring real-world diagnosis patterns and factors associated with asthma risk in a large urban atopic population.

METHODS: This is a single-center study of children aged 0-18 years diagnosed with atopic dermatitis. We performed retrospective chart review to determine whether each subject was diagnosed with and evaluated for asthma. We used logistic regression to analyze the risk of asthma diagnosis in association with race, sex, age, BMI, insurance, and the Area Deprivation Index (ADI), tabulated by block group, with a higher value indicating more socioeconomic disadvantage.

RESULTS: Our study population includes 728 Black children and 246 non-Hispanic White children with atopic dermatitis. Compared with non-Hispanic White children, Black children were significantly more likely to have an asthma diagnosis [31.2% vs. 10%, p = 0.00]. Logistic regression demonstrated that 3 main variables impacted this observed difference: higher ADI, higher BMI, and greater age at time of evaluation. Black children with asthma were also less likely to see an allergist (46.7% vs. 69%, p = 0.002) and more likely to lack prior inhalant allergy testing [OR=7.5, p = 0.03].

CONCLUSIONS: The atopic march has not been as widely studied in Black children as in White children. In order to effectively minimize existing healthcare disparities, we must further understand the factors underlying racial differences in diagnosis of atopic diseases, as well as barriers to accurate diagnosis and management of these common morbid conditions.

382 Asthma Morbidity Measures Across Black Ethnic Subgroups

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RATIONALE: Black adults are disproportionately affected by asthma morbidity but often considered a homogenous group despite cultural and genetic differences. We sought to determine if Black subgroups experience differences in asthma morbidity.

METHODS: Adults with moderate-severe asthma were recruited across the continental US and Puerto Rico for the PREPARE trial. We defined "Non-African Americans" (non-AA/B) as Black participants self-identifying as either "Black Latinx" or "Other non-AA/B" (Caribbean, continental African, or other Black); and "African Americans" (AA/B) as Black participants who did not self-report such identities. Baseline characteristics and asthma morbidity measures (self-reported exacerbations requiring systemic corticosteroids, ER/urgent care (ER/UC) visits, hospitalizations) were compared between subgroups using multivariate regression.

RESULTS: Non-AA/B (n=226) vs. AA/B participants (n=518) were more likely to be younger, from Northeast US, speak Spanish, have lower BMIs, <1 comorbidity, be depressed, and have low health literacy and higher blood eosinophil counts. Non-AA/B participants had greater odds of more ER/UC visits for asthma (OR=1.23, 95%CI 1.02-1.44, p=0.048) but had similar corticosteroid courses and hospitalizations vs. AA/B participants. Of the non-AA/B subgroups, Black Latinx (n=146), but not Other non-AA/B participants (n=80), had greater odds of more ER/UC visits vs. AA/B participants (OR=1.34, 95%CI 1.05-1.64, p=0.046) after adjustment. There were no significant differences in corticosteroid courses and hospitalizations among subgroups.

CONCLUSIONS: Non-AA/B adults exhibit greater ER/UC visits, but not other asthma morbidity measures vs. AA/B, which seems to be driven by Black Latinx adults. Geography, healthcare literacy, and comorbidities may contribute to this difference.

383 Correlation between the basophil activation test and the severity of rhinitis in local respiratory allergy

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RATIONALE: Nasal allergen challenge is required to identify local sensitizations in local allergic rhinitis (LAR) and dual allergic rhinitis (DAR, coexistence of LAR to perennial allergens and allergic rhinitis (AR) to seasonal allergens). The basophil activation test (BAT) has been proposed as a time- and resource-saving *in vitro* alternative diagnostic test in local respiratory allergy.

METHODS: Prospective evaluation of 84 rhinitis patients [34 AR, 26 DAR, 16 LAR, 8 non-allergic rhinitis (NAR)], and 11 healthy non-atopic controls (HC). BAT with *Dermatophagoides pteronyssinus* (DP), *Alternaria alternata* (AA), grass pollen (GP) and/or olive pollen (OP) were performed. Clinical and demographic data were collected.

RESULTS: BAT showed a different diagnosis rating depending on the clinical phenotype with positive results in 50%, 80%, and 91% of LAR, DAR, and AR patients; and negative in 91% and 75% of HC and NAR subjects. Regarding local allergen sensitization, BAT was positive to DP in 40% LAR and 47% DAR patients, to AA in 40% LAR and 50% DAR patients, and to GP and OP in 67% LAR patients. For local sensitizations, the proportion of peripheral basophils expressing CD63 after allergen stimulation (%CD63) was higher in DAR than in LAR individuals (p=0.009). A positive correlation was observed between rhinitis severity and %CD63 in LAR (r=0.777, p=0.040) and DAR (r=0.748, p=0.020). No correlation was observed for systemic sensitizations.

CONCLUSIONS: These results indicate that BAT helps in the diagnosis of local respiratory allergy, and can be a useful biomarker of rhinitis severity in patients with LAR and DAR.