MINOR POPULATIONS STUDIED

Children from Costa Rica

As part of a cross-sectional case-control study of asthma, 287 children aged 7 to 12 years (mean age, 9.1 years; 53.2% males) were enrolled via the Emergency Department of the main tertiary hospital in San Jose, Costa Rica.[E1] San Jose has a tropical savannah climate.[E2] Geohelminths are common in Costa Rica, but antihelminths are administered to children annually starting at age 1 year and active parasitic infections are infrequently identified.[E3] There were 96 cases, defined by presentation for acute wheezing illness, and 191 controls who presented for evaluation of urgent medical problems unrelated to acute wheeze (most commonly trauma, gastrointestinal symptoms, and/or fever). Of the 191 subjects, 65 had a history consistent with stable asthma. In the Costa Rica population, dust mite sensitization is much more strongly associated with asthma than sensitization to *Ascaris*. For the current analysis, blood samples were available for IgE testing in 277 of the subjects. The study was approved by the Ethics Committee at the Hospital Nacional de Niños and by the Institutional Review Board at the University of Virginia.

Subjects from northern Sweden

Subjects from Kiruna and Luleå in northern Sweden were enrolled in a prospective, population-based study as previously reported.[E4] This area has a subarctic climate[E2] and thus is inhospitable to many allergenic species, such as dust mites, cockroaches, fungi, and ticks. Of the 963 subjects who provided a blood sample at the age 19-year time point, 413 were selected for α-Gal sIgE testing. This included all 218 subjects who were sensitized to cat and an additional 195 randomly selected subjects. The study included detailed information about asthma and exposure history and was approved by the Regional Ethics Committee of Umeå University and the Institutional Review Board at the University of Virginia.

REFERENCES

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E2. Beck HE, Zimmermann NE, McVicar TR, Vergopolan N, Berg A, Wood EF. Present and future Koppen-Geiger climate classification maps at 1-km resolution. Sci Data 2018;5:180214.

E3. Hunninghake GM, Soto-Quiros ME, Avila L, Ly NP, Liang C, Sylvia JS, et al. Sensitization to *Ascaris lumbricoides* and severity of childhood asthma in Costa Rica. J Allergy Clin Immunol 2007;119:654-61.

E4. Perzanowski MS, Ronmark E, James HR, Hedman L, Schuyler AJ, Bjerg A, et al. Relevance of specific IgE antibody titer to the prevalence, severity, and persistence of asthma among 19-year-olds in northern Sweden. J Allergy Clin Immunol 2016;138:1582-90.

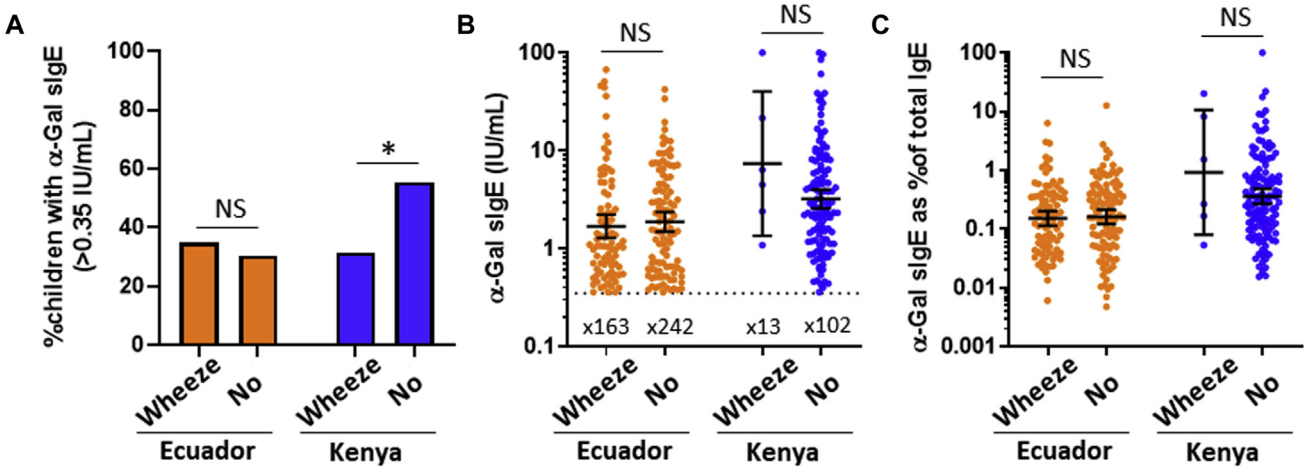

FIG E1. Comparison of (**A**) prevalence, (**B**) levels, and (**C**) levels in relation to total IgE for α-Gal sIgE in children with or without recurrent wheeze in Ecuador and Kenya. *NS*, Not significant. Prevalence values were compared using χ^2. Levels of α-Gal sIgE were expressed as geometric mean of positives (95% CI) and compared by the Mann-Whitney *U* test, **P* < .05, NS *P* > .05.

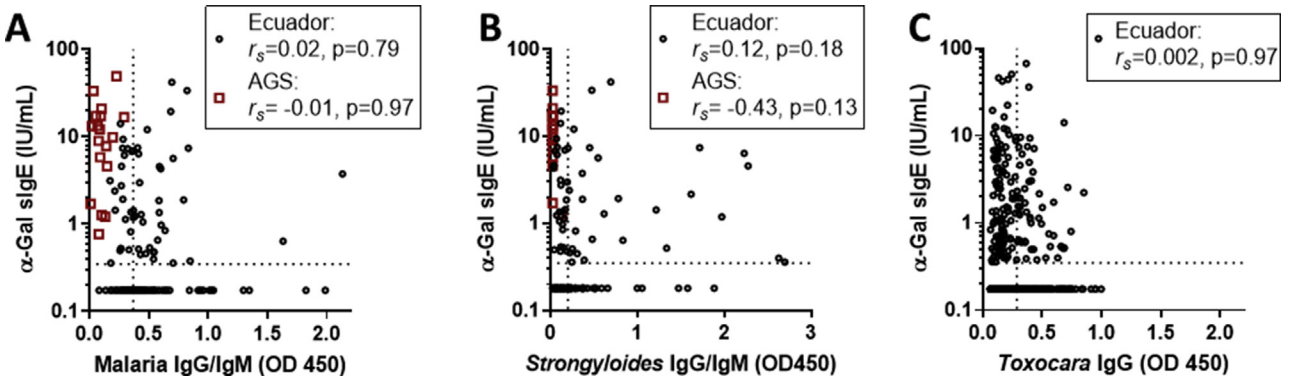

FIG E2. Relationship of α-Gal sIgE with serologic markers of 3 parasites prevalent in Esmeraldas: **A,** α-Gal sIgE and malaria IgG/IgM in children from Ecuador (n = 123) and children with AGS in the United States (n = 15). **B,** α-Gal sIgE and *Strongyloides* IgG/IgM in children from Ecuador (n = 123) and children with AGS in the United States (n = 15). **C,** α-Gal sIgE and *Toxocara* IgG in children from Ecuador (n = 516). r_s, Spearman rank correlation. For α-Gal sIgE, dotted lines reflect threshold of detection. For the 3 representative parasites, the dotted line reflects the calibrator cutoff distinguishing positive and negative values.

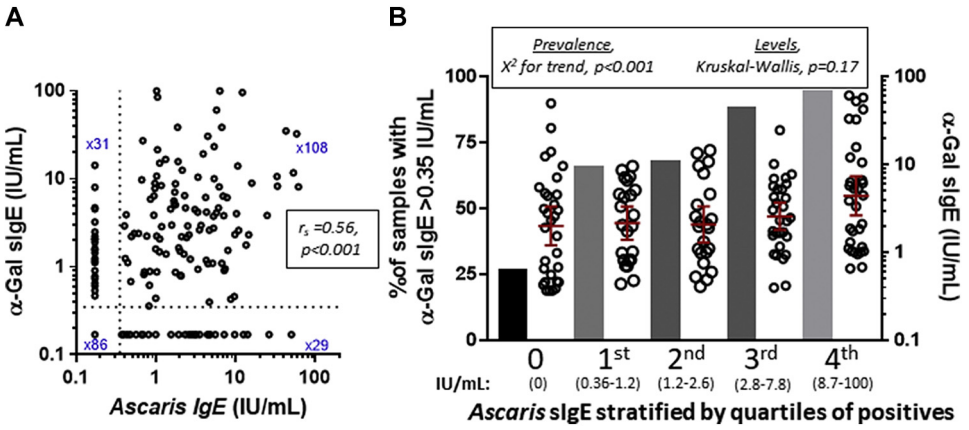

FIG E3. **A**, *Ascaris* sIgE vs α-Gal sIgE in children from Kenya (n = 254). **B,** Relationship between α-Gal sIgE prevalence (bars, left y-axis) and levels (scatter plot, right y-axis) in the cohort when stratified on the basis of *Ascaris* sIgE status, where n ≤ 0.35 IU/mL = 117 and n > 0.35 IU/mL = 137.

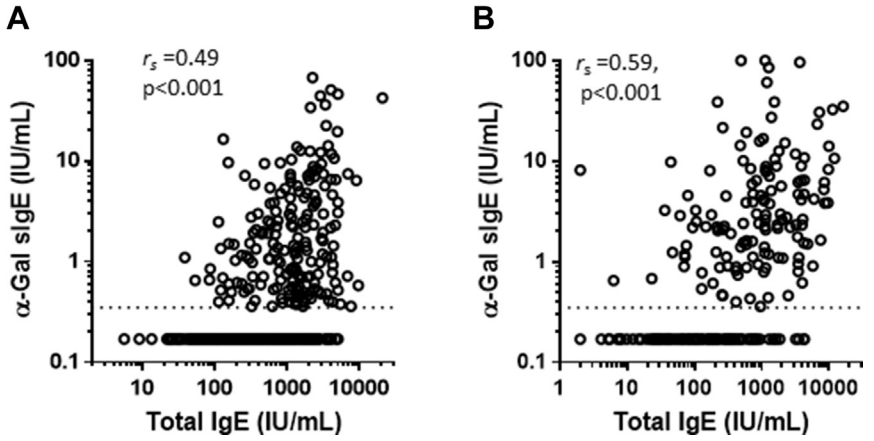

FIG E4. Total IgE vs α-Gal sIgE in children from (**A**) Ecuador (n = 599) and (**B**) Kenya (n = 254) with Spearman correlations (r_s).

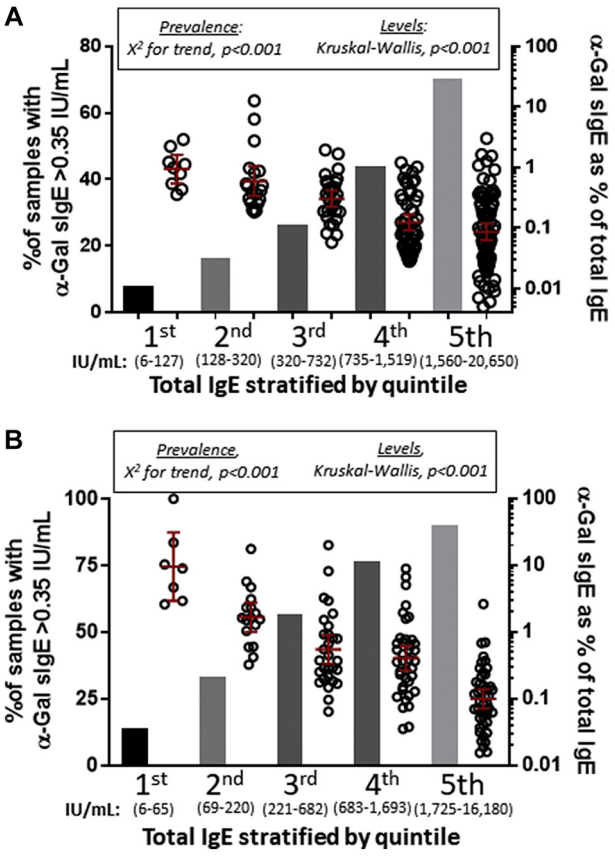

FIG E5. Relationship between α-Gal sIgE prevalence (bars, left y-axis) and α-Gal levels as a percentage of total IgE (scatter plot, right y-axis) in the cohort when stratified by quintiles of total IgE in (**A**) Ecuador and (**B**) Kenya.

TABLE E1. Characteristics of subjects in Kenya (n = 254) in relation to α-Gal sensitization

Characteristic	α-Gal IgE > 0.35 IU/mL (n = 137)	α-Gal IgE ≤ 0.35 IU/mL (n = 117)	*P*
Age (y), median (range)	11 (9-15)	10 (8-15)	<.001*
Sex: male, n (%)	71 (51.8)	59 of 116 (50.9)	.90†
Rural	101 (73.7)	30 (25.6)	<.001†
Asthma	6 of 133 (4.5)	13 of 115 (11.3)	.06†
Total IgE, GM (95% CI)	855 (657-1113)	109 (80-147)	<.001‡
Total IgE >500 IU/mL	94 (68.6)	19 (16.2)	<.001†
Ascaris IgE ≥0.7 IU/mL	98 (71.5)	20 (14.6)	<.001†
Dust mite IgE ≥0.7 IU/mL	24 (17.5)	10 (8.5)	.04†
Cockroach IgE ≥0.7 IU/mL	68 of 134 (50.7)	18 of 116 (15.5)	<.001†

GM, Geometric mean.
*Compared with Student *t* test.
†Compared with Fisher exact test.
‡Compared with Mann-Whitney *U* test.