Gastrointestinal-Isolated Distress is Common in Alpha-Gal Allergic Patients on Oral Challenge

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BACKGROUND AND AIMS:

- Alpha-gal allergy causes a delayed reaction to mammalian meats and has been reported worldwide.
- Patients with the allergy may present with isolated gastrointestinal (GI) symptoms, but this phenotype is poorly understood.

METHODS:

- A pooled cohort of 91 patients with a diagnosis of alpha-gal allergy underwent oral food challenge under direct observation
- We compared characteristics of patients who demonstrated GI-isolated symptoms on challenge with those who exhibited symptoms outside the GI tract (skin, respiratory, circulatory).

RESULTS:

- Of the 91 patients, the most common type of symptom was GI distress (72.5%), followed by skin changes (57.1%) and respiratory distress (5.5%).
- The most common GI symptoms were abdominal pain (71.0%) and vomiting (22.0%).
- GI-isolated symptoms occurred in 37 patients (40.7%). These patients:
  - Reacted more quickly (median onset of symptoms in GI-isolated group 90 minutes vs. 120 minutes)
  - Were more likely to be children than adults
  - Had a higher median alpha-gal IgE
- The distribution of sex and self-reported history of tick bites was similar in the GI-isolated group versus those with systemic symptoms.

CONCLUSIONS:

- Isolated GI distress occurred in 4 in 10 alpha-gal allergic individuals who developed symptoms on oral food challenge with mammalian meat.
- Patients in our cohort with isolated GI alpha gal had quicker onset of symptoms, were younger, and had higher median alpha-gal IgE.
- Further prospective studies are necessary to better understand the epidemiology, pathophysiology, and manifestations of GI-isolated alpha-gal allergy.

Characteristic	GI-Isolated Symptoms (n=37)	Systemic Symptoms (n=54)	P Value
Gender, n(%)			
Female	25 (67.6%)	33 (61.1%)	0.66*
Male	12 (32.4%)	21 (38.9%)	
Age, Median range; IQR	11 (5-57; 8-13)	17 (4-65; 9-38)	0.03**
Age< 18 (%)	28 (75.7%)	28 (51.8%)	0.03*
Onset of symptoms in minutes, median (range; IQR)	90 (45-330; 75-120)	120 (45-375; 100-185)	<0.003**
Alpha-gal IgE U/L, median (range; IQR)	18.7 (0.7-74.7; 4-35)	10.45 (0.9-344.5; 4.5-25)	0.23**
History of Tick Bite	7 (18.9%)	12 (22.2%)	0.8*

Table 1: Characteristics of patients with GI-isolated symptoms and those with systemic symptoms on oral food challenge.
IQR, Interquartile ratio; U/L Units per liter
P-values calculated with *Fisher's exact and **Mann-Whitney ranksum

Figure 1: Amblyomma Americanum, the Lone Star tick