

Title: Distribution and Prevalence of Alpha-Gal Syndrome in Arkansas: Insights from the First Statewide Mandatory Reporting Program

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Background

Alpha-gal syndrome (AGS) is a delayed allergic reaction triggered by galactose-alpha 1,3-galactose in non-primate mammalian meat. Arkansas, a state with mandatory AGS reporting, provides a unique opportunity to evaluate the distribution and prevalence of this condition.

Objective

To describe the geographic and demographic patterns of AGS cases reported in Arkansas.

Methods

We analyzed AGS cases reported to the Arkansas Department of Health from September

2023 through July 2025. Cases were classified as confirmed (meeting clinical and laboratory criteria), suspected (laboratory criteria only), or not a case, according to the Council of State and Territorial Epidemiologists. Non-residents were excluded. Clinical criteria included allergic or gastrointestinal symptoms 2–10 hours after ingestion of mammalian products or within 2 hours of parenteral exposure to alpha-gal-containing medications or vaccines. Laboratory criteria required serum or plasma IgE ≥ 0.1 kU/L. Confirmed cases were stratified by age, sex, and region.

Results

A total of 5,167 cases were reported across 49 of 75 counties (65.3%); 403 (7.8%) were confirmed, 2,594 (50.2%) suspected, 1,797 (34.8%) open, and 383 (7.4%) not a case.

Females comprised 58.6% of confirmed cases. Prevalence was highest among adults aged 40–49 years (19.9%) and lowest in those 20–29 years (7.7%). Most cases were reported from Northern Arkansas (73.7%), with fewer from central (21.6%) and southern regions (4.7%). Seasonal peaks occurred in summer (29.2%) and fall (28.5%).

Conclusion

Mandatory reporting provides a centralized dataset that informs public health planning, education, and resource allocation for AGS. Enhancing surveillance and mobilizing task forces remain key challenges to accurately capture confirmed cases.