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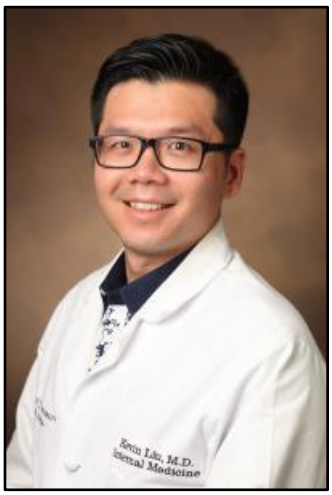

Practicum Site: Tennessee Department of Health

Practicum Site Supervisor: Abelardo Moncayo, Ph.D.

Active Surveillance on the Prevalence of Alpha-Gal (galactose-alpha-1,3-galactose) syndrome

Keywords: alpha-gal, prevalence, patient characteristics

Introduction: Alpha-gal Syndrome (AGS) is a hypersensitivity reaction to galactose-a-1,3-galactose (alpha-gal), found in non-primate mammalian meats and meat-products. The Council of State and Territorial Epidemiologists (CSTE) created a standardized reporting form and AGS case definition defined as symptoms and a positive sIgE antibody test for alpha-gal.[3] The objective is to assess AGS prevalence in Tennessee amongst high pretest probability patients.

Methods: The was an observational retrospective study conducted at an urban quaternary care center in Nashville, TN, USA between 2014 and 2021 including all patients who have an ICD-10 code including T78.40XA (allergy unspecified), Z91.018 (allergy to other foods), E74.29 (other disorder of galactose metabolism), or W57 (Bitten or stung by nonvenomous insect and other nonvenomous arthropods) or who have a positive alpha-gal sIgE laboratory test (alpha-gal pnl-vrcr or alpha galactosidase srm-arup). Descriptive data included the primary endpoint of prevalence, rate of known tick exposure, anaphylaxis rate, and hospitalization rate.

Results: The study reviewed the records of 485 patients, the prevalence of AGS in high-risk patients was 51.75% (251/485). Statistically significant men were more likely than women to test positive for AGS when screened ($p = 0.000065$). Symptoms found to be significantly more often in confirmed AGS include anaphylaxis ($p = 0.003$) and nausea ($p = 0.037$). The highest prevalence of positive cases was 64.7% (22/34 cases), occurring in zip code 37064 (Williamson County). Identified tick bites were identified in 43.02% (108/251) of confirmed cases and 21.37% (50/234) of non-AGS cases. None of the screened patients died from AGS, and 63.6% of the hospitalized patients (21/33) were confirmed AGS.

Conclusions: Within the highest pretest probability middle Tennessee population screened for AGS, the prevalence was 51.75%. Patients had limited recollection of known tick exposure. Further surveillance data is needed to determine the risk of alpha-gal associated with tick-bite and geolocate incidence.