Staphylococcus Aureus Acquisition in Hispanic Children with Cystic Fibrosis

M. McGarry¹, D. W. Nielson², N. P. Ly³; ¹Benioff Children's Hosp, Univ of California, San Francisco, San Francisco, CA, United States, ²Univ of California At San Francisco, San Francisco, CA, United States, ³Pediatrics, UCSF, San Francisco, CA, United States.

Corresponding author's email: meghan.mcgarry@ucsf.edu

Background: Hispanic patients with cystic fibrosis (CF) have more severe pulmonary disease than non-Hispanic white patients. Hispanics are more likely to acquire Pseudomonas pulmonary infections and are more likely to convert to mucoid Pseudomonas, multidrug resistant Pseudomonas, and chronic Pseudomonas. Methicillin-Resistant Staphylococcus aureus is a pulmonary infection that causes more severe pulmonary disease in CF. It is not known if Hispanics acquire MSSA and MRSA differently than non-Hispanic whites. Objective: To determine if the timing and rate of MSSA and MRSA acquisition vary between Hispanic and non-Hispanic white children with CF. Methods: This longitudinal cohort study of subjects ages 0-25 years in the CF Foundation Patient Registry from 2008 to 2013 compared acquisition of MRSA between Hispanic and non-Hispanic white patients. Risk of acquisition was assessed by Kaplan-Meier survival curves and timing of acquisition was determined with Cox regression analyses. Analyses were adjusted for sex, age of diagnosis, CFTR mutation class, insurance type, and pancreatic insufficiency. Results. Of 13,779 patients, 1,370 (7.5%) were Hispanic and 12,409 (92.5%) were non-Hispanic white. Hispanics acquired MSSA at a median age of 8.5 years old (3.4-16.8) compared to 11.7 years old (5.5-20.1, p<0.001) in non-Hispanic whites. Hispanics had a 35.5% higher risk of acquiring MSSA than non-Hispanic whites (HR 1.37, 1.26-1.48, p<0.001). Hispanics acquired MRSA at 14.4 years old (8.1-22.3) compared to 17.7 years old (11.1-24.8, p<0.001) in non-Hispanic whites. Hispanics had a 52.9% higher risk of acquiring MRSA than non-Hispanic whites (HR 1.53, 1.39-1.68, p<0.001). Conclusions: Hispanic children have an increased risk of developing MSSA and MRSA compared to non-Hispanic white children. Hispanics acquire MSSA MRSA at an earlier age than non-Hispanic whites. The increased incidence and earlier age of onset of MRSA may contribute to the more severe pulmonary function and increased morbidity seen in Hispanic children with CF.