

Department of Surgery
2026 Research Day
6th May 2026 (Wednesday) | 7 am – Noon | MART Auditorium

Title:

CF Carrier Status Increases Medical Burden in Chronic Rhinosinusitis: A Propensity-Matched Study

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Faculty Mentor(s):

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Background:

Cystic fibrosis (CF) is a recognized cause of severe chronic rhinosinusitis (CRS). Although carriers have traditionally been considered asymptomatic, individuals with a single CFTR mutation retain only about half of normal CFTR function and may exhibit CF-like phenotypes such as bronchitis and CRS. Approximately 1 in 35 Caucasians are CF carriers in the United States. Many report chronic sinonasal symptoms. This study aimed to determine whether CF carriers with CRS experience a more intensive treatment course than confirmed non-carriers.

Methods:

A retrospective cohort was assembled from the TriNetX research network. CRS patients with genetically confirmed CF carrier status were identified and matched 1:1 to CRS patients who tested negative for CF. Propensity score matching balanced demographics and comorbidities, including asthma and smoking. After matching, treatment histories were compared, including rates of endoscopic sinus surgery (ESS), courses of oral prednisone, antibiotic use (amoxicillin–clavulanate), and intranasal therapies.

Results (or Preliminary Results):

The cohort included 3,896 patients (1,948 carriers and 1,948 matched non-carriers). Carrier status was not associated with higher ESS rates (5.2% vs 6.1%; $p = 0.21$). However, CF carriers received more medical therapy. Oral prednisone use was greater among carriers (37.0% vs 27.3%; $p < 0.0001$). Carriers were more likely to receive amoxicillin–clavulanate (37.2% vs 33.0%; $p = 0.007$), and antibiotic-treated carriers received more courses per patient (2.78 vs 2.33; $p = 0.008$). Overall use of topical therapy was higher in carriers (62.9% vs 53.1%; $p < 0.0001$), driven by increased use of intranasal steroids and decongestants. Rates of intranasal antihistamine use were similar between groups.

Conclusions (or Preliminary Conclusions):

CF carriers with CRS required substantially more medical therapy than matched non-carriers despite similar ESS rates. These findings suggest that CF carriers may manifest a symptom-prone or inflammation-leaning CRS phenotype. Clinicians should recognize this potential and optimize medical management early, with careful follow-up of CF carriers exhibiting chronic sinonasal symptoms.