Chronic rhinosinusitis exacerbation frequency predicts asthma exacerbation frequency but not emergency department usage

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Abstract

Introduction: There exists a strong association between chronic rhinosinusitis (CRS) disease burden and pulmonary status in asthmatic CRS patients.

Objective: To determine the association between acute exacerbations of CRS (AECRS) and asthma exacerbations of varying severity.

Material and Methods: For this cross-sectional study 105 asthmatic patients with CRS were prospectively recruited. CRS burden was measured using the 22-item Sinonasal Outcome Test (SNOT-22), and metrics of AECRS including patient-reported sinus infections and CRS-related antibiotic usage over the preceding year. Asthma exacerbation frequency was measured using frequency of asthma-related oral corticosteroids and asthma-related emergency department (ED) visits over the prior year.

Results: The frequency of asthma-related oral corticosteroids used was associated with the frequency of patient-reported sinus infections (adjusted relative risk [RR]=1.23, 95%CI: 1.06–1.43, p=0.007), and CRS-related antibiotics usage (adjusted RR=1.20, 95%CI: 1.02–1.43, p=0.031) but not associated with SNOT-22 score (p>0.050). The frequency of asthma-related ED visits was not associated with any metric of CRS burden.

Discussion: Association between CRS disease burden and asthma exacerbation driven by AECRS

Material and Methods

• Chronic rhinosinusitis (CRS) a common inflammatory disease of the paranasal sinus mucosa that results in loss of productivity and quality of life detriment
• CRS disease consequences driven by CRS disease manifestations: chronic symptomatology, acute exacerbations of CRS (AECRS), exacerbation of pulmonary disease
• AECRS may be important drivers of asthma exacerbations
• Hypothesis: AECRS frequency is associated with metrics of asthma exacerbations: asthma-related oral corticosteroids and asthma-related emergency department (ED) visits

Results

The frequency of asthma-related oral corticosteroids used was associated with the frequency of patient-reported sinus infections (adjusted relative risk [RR]=1.23, 95%CI: 1.06–1.43, p=0.007), and CRS-related antibiotics usage (adjusted RR=1.20, 95%CI: 1.02–1.43, p=0.031) but not associated with SNOT-22 score (p>0.050). The frequency of asthma-related ED visits was not associated with any metric of CRS burden.

Discussion

• Association between CRS disease burden and asthma exacerbations largely driven by AECRS
• This association did not carry over to asthma-related ED usage, perhaps due to low frequency of ED usage
• Possible reflection of multifaceted- and often-socioeconomic-utilization patterns of ED usage

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References