Symptoms and Biomarkers in Chronic Rhinosinusitis (CRS)

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ABSTRACT

OBJECTIVE
The symptom-based diagnosis of chronic rhinosinusitis (CRS) remains controversial despite efforts to standardize diagnostic criteria. More recently, objective biomarkers have been analyzed in attempts to further define CRS. The aim of this study was to evaluate the correlation of nasal endoscopy and intranasal biomarkers of eosinophilic inflammation with the cardinal symptoms of CRS—congestion and rhinorrhea.

INTRODUCTION
Chronic rhinosinusitis (CRS) remains a challenging disease entity with an estimated 23 million patients affected in the USA. There have been limited studies defining the condition before the past 2 decades. The American Academy of Otolaryngology-Head and Neck Surgery (2005) and the American Rhinology Society (2007) have recently released guidelines for CRS to help guide clinical trial development. The standardized definition of CRS was developed to define a subset of patients with chronic rhinosinusitis with nasal polyposis (CRSwNP) and to correlate anatomic findings with nasal symptoms in conjunction with objective documentation to include computed tomography (CT), nasal endoscopy (NE), and biochemical release of inflammatory mediators. Nasal endoscopy by an experienced otolaryngologist, in contrast to imaging, is an essential assessment of the sinonasal anatomy in the management of CRS patients with nasal polyposis (CRSwNP) and of ethmoid polyposis. Nasal endoscopy scoring was performed by a staff physician.

SUBJECTS AND METHODS
Prospective multi-center study data was obtained by the Grono Sinus Institute (Buffalo, NY) database from post-surgical chronic rhinosinusitis patients refractory to medical therapy. Participants enrolled in an on-going randomized clinical trial. Participants included English-speaking adults with refractory chronic rhinosinusitis of no less than six months duration. CRSwNP patients underwent nasal endoscopy with an on-going randomized clinical trial.

METHODS
Nasal endoscopy scoring was performed by a staff physician blinded to symptom questionnaire responses. Nasal secretion specimens from the middle meatus were obtained via an anterior rhinoscopy collector. Nasal secretion specimens were used to evaluate nasal mucus markers of fungal antigens, eosinophil burden, and inflammatory cytokines relative to symptoms of post-surgical CRS patients refractory to medical therapy.

RESULTS
Evaluations of the presence of each of 16 symptoms with the corresponding CT occlusion score failed to demonstrate reliable positive predictive value (PPV). Logistic regression curves indicated an increased likelihood of CT occlusion failure to demonstrate reliable positive predictive value (PPV). Logistic regression curves indicated an increased likelihood of CT occlusion failure to demonstrate reliable positive predictive value (PPV).

CONCLUSION
Evaluation of the prevalence of each symptom in those with nasal endoscopy scores suggested that nasal endoscopy results more closely parallel the cardinal symptoms of CRS—congestion and rhinorrhea. Our study demonstrates that nasal endoscopy results more closely parallel the cardinal symptoms of CRS—congestion and rhinorrhea. Our study demonstrates that nasal endoscopy results more closely parallel the cardinal symptoms of CRS—congestion and rhinorrhea. Our study demonstrates that nasal endoscopy results more closely parallel the cardinal symptoms of CRS—congestion and rhinorrhea.

REFERENCES

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