183 Preoperative Sinonasal Symptom Scores Predict Post-Surgery, Post-Aspirin Desensitization Disease Status in Aspirin Exacerbated Respiratory Disease

Edward C. Kuan, MD[1], William P. Kennedy, MD[2], Neil N. Patel, BS[2], Michael A. Kohanski, MD, PhD[2], Charles C. Tong, MD[2], David W. Kennedy, MD[2], James Palmer, MD[2], Nithin D. Adappa, MD[2], and John V. Bosso[3]; [1]UC Irvine, Orange, CA, [2]University of Pennsylvania, Philadelphia, PA, [3]Department of Otorhinolaryngology—Head and Neck Surgery, Division of Rhinology, University of Pennsylvania, Perelman School of Medicine, Philadelphia, PA.

RATIONALE: Aspirin exacerbated respiratory disease (AERD) is a challenging upper and lower respiratory disease which requires joint management between allergists and otolaryngologists. Complete sinus surgery followed by aspirin desensitization (AD) appears to improve outcomes long-term. Recent studies have demonstrated a relationship between high preoperative, pre-AD sinonasal symptoms scores and severity of reactions during AD. In this study, we provide the first evidence for using stratified preoperative, pre-AD sinonasal symptom scores to predict postoperative, post-AD outcomes.

METHODS: Retrospective chart review of all patients with aspirin challenge-proven AERD who underwent complete endoscopic sinus surgery followed by AD. Preoperative, postoperative/pre-AD, and short- (<2 months) and long-term (>6 months) postoperative/post-AD sinonasal symptom scores were collected (22-item Sino-Nasal Outcomes Test, SNOT-22). A longitudinal linear mixed-effects model was used for data analysis.

RESULTS: Preoperative SNOT-22 scores (n=47) were divided into tertiles (cutoffs of 36 and 54 indicating mild [22.5±13.7], moderate [44.3±12.2], and severe [72.9±19.7] disease). Postoperative, pre-AD SNOT-22 in all disease groups decreased and were not significantly different (12.3±13.7, 11.1±12.2, and 22.7±19.7; p=0.074). Following AD, only the severe group scores worsened (35.0±20.3, p<0.001), whereas the other groups demonstrated negligible change (9.3±14.3 and 14.4±12.2). At 6 months post-AD, all groups redemonstrated convergence in symptom scores (23.7±20.9, 19.4±15.4, and 31.0±27.6, p=0.304).

CONCLUSIONS: Preoperative SNOT-22 scores may be used as a predictor of postoperative, post-AD patient-reported outcomes in AERD. Patients with mild and moderate disease may derive benefit from AD alone, while those with severe disease may require additional interventions (e.g., biologics).

184 Evaluation Of Clinical Changes In Pediatric Patients With Atopic Dermatitis And Respiratory Allergy Receiving Allergen-specific Immunotherapy

Cindy Elizabeth de Lira-Quezada, MD[1], Alfredo Arias Cruz, MD FAAAAI[2], Sandra N. González Diaz, MD PhD FAAAAI[3], David Eugenio Roman Canamar, MD[4], Rosalaura Villarreal Gonzalez, MD[5], and Daniel Sanchez-Guerra, MD[6]; [1]University Hospital - Dr. Jose Eleuterio Gonzalez, Monterrey, NL, Mexico, [2]Universidad Autonoma de Nuevo Leon, Monterrey, Mexico, [3]Hospital Universitario, Monterrey, NL, Mexico, [4]University Hospital José Eleuterio González, Monterrey, NL, Mexico, [5]University Hospital Jose Eleuterio Gonzalez, Monterrey, NL, Mexico, [6]University Hospital, Monterrey, Mexico.

RATIONALE: Atopic dermatitis (AD) is a chronic illness with recurrent relapses. Allergen-specific immunotherapy (ASIT) directed towards IgE has proven effective in respiratory allergy. In Mexico however, there is currently no report of the clinical response in patients with ASIT and AD.

METHODS: Observational, ambispective study including patients 3-16 years of age with atopic dermatitis and respiratory allergy who atended the outpatent clinic from January 2016 to June 2017. Group 1: patients that started ASIT 6 months prior to inclusion and observed for 9 months total; Group 2: patients with ASIT started upon study initiation. In both groups SCORAD, use of medicines, quality of life and flares were evaluated.

RESULTS: A total of 17 patients were included. 9 in group 1 which had 6 patients (66.6%) with mild AD, 3 (33.3%) with moderate and none with severe AD. Group 2 had a total of 8 patients: 4 patients (50%) with mild AD, 2 patients (25%) moderate and 2 (25%) with severe AD. *Dermatophagoides farinae and pteronyssinus, Atriplex canescens, Fraxinus americana, Junglans regia and Canis familiaris were allergens included in the ASIT*. The mean SCORAD was compared in the initial and last visit finding a statistical significance with $p=0.002$ in group 1, $p=0.005$ in group 2 and in both groups combined $p=0.001$. Days of treatment required and flares were reduced and improvement fo quality of life was seen in both groups.

CONCLUSIONS: ASIT is effective in patients with AD, resulting in significant clinical changes regarding SCORAD, quality of life, need of medication and flares.

185 A Systematic Review on the Association between Rhinovirus and Sinusitis

Usmaan Basharat[1], Mazen Marwan Aiche[2], Marianne Myungjin Kim[3], Maheep Sohal[4], and Eugene H. Chang, MD[5]; [1]University of Arizona College of Medicine Phoenix, Phoenix, [2]University of Arizona College of Medicine Phoenix, Tucson, [3]University of Arizona College of Medicine-Tucson, Tucson, AZ, [4]University of Arizona College of Medicine-Tucson, Tucson, [5]University of Arizona - Department of Otolaryngology, Tucson, AZ.

RATIONALE: Rhinovirus (RV) infections are the most common cause of viral URIs, and in the majority of persons self-resolve. However, in others, viral URIs can progress to bacterial sinusitis and induce chronic rhinosinusitis (CRS) exacerbations.

METHODS: We conducted a comprehensive PRISMA review through April 2018 based on MEDLINE, Embase, Web of Science-SCI and CPCI-S using keywords: RV, respiratory virus, sinusitis, and airway epithelial cells. The goal of this systematic review was to (1) determine the prevalence between RV and CRS, (2) investigate the pathophysiologic mechanisms by which RV induces sinonasal inflammation, (3) study the changes that occur after experimental RV inoculation, and (4) explore the treatment options available for RV-associated sinusitis. Data regarding study design, research question, intervention, subjects, outcomes, and biases was extracted.

RESULTS: The initial search yielded 2395 unique abstracts, of which 600 were selected for full-text review, and 147 included in the final review. We determined that (1) the prevalence of RV infections is increased in those with CRS, (2) RV-A and RV-C challenges *in vitro* to sinonasal epithelia produce robust cytokine responses and differential gene changes, (3) humans challenged *in vivo* with RV secrete local and systemic inflammatory mediators with radiographic mucosal thickening and (4) no current therapies have produced consistent and significant resolution of disease.

CONCLUSIONS: RV infections are common in persons with CRS, and incite inflammatory reactions that may result in CRS exacerbations and progression of disease. Further studies assessing RV-species, and the host-virome response are required to develop new strategies targeting RV-induced CRS.

SATURDAY