Editorial: Insight into allergic, rhinologic and skull based pathologies

Over the past few years, we have witnessed numerous and continuing advances in our understanding of molecular mechanisms facilitating chronic rhinosinusitis (CRS). The current issue of the American Journal of Rhinology and Allergy contributes further to this area of study. Drilling et al. characterize the in vitro activity of a bacteriophage cocktail against Staphylococcus aureus biofilms, revealing its effectiveness in eliminating the organism from a substantial portion of clinical isolates in both planktonic and biofilm forms. Hwang and colleagues examine characteristics of H2S in CRS, illustrating its role as an important CRS-associated inflammatory mediator. Continuing this trend of translationally relevant scholarship, Batzakakis et al. and Topal et al. respectively delineate the relationship specific adhesion molecules and reactive oxygen species have with nasal polyposis.

The editorial staff at the American Journal of Rhinology and Allergy understands the realization that proficiency in basic sciences is fundamental for the advancement of the subspecialty by also offering several other potentially impactful analyses. Luukkainen and colleagues explore the possible mechanisms present in asthma and CRS with nasal polyps among patients residing in urban environments, while Jeong et al. suggest the utility of nasal nitric oxide levels in screening for CRS with polyposis. This issue offers multiple analyses supporting the integral role Staphylococcal enterotoxin may play in chronic airway disease, via differentiation of regulatory T-cells (TRegs) or more direct effects on human airway epithelial cells. To round off this issue’s invaluable basic and translational science contributions, Pajor and colleagues explore immunologic aspects facilitating the development of sinonasal inverted papillomas, and Kim examines the impact of environmental considerations, including alcohol and smoking, on allergy risk.

In addition to the important studies at the molecular level, this issue offers exciting and complementary findings that may be of use to practitioners in the office setting. Sedaghat et al. tackle an understudied topic, examining geographic patterns in emergency department imaging for pediatric patients with sinusitis, and report previously undescribed disparities. Lee and Chiu note a role for topical antiinfective irrigations in CRS through their systematic review of the literature.

In addition to studies relevant to allergic and inflammatory processes, the American Journal of Rhinology and Allergy continues to support the importance of skull base topics. Sunaryo et al. detail the available literature regarding anterior skull base and sinonasal schwannomas, noting the importance of including these entities in a differential diagnosis of any anterior skull base mass involving the cribiform plate. These authors also note that gross-total resection of these lesions should be the goal of operative management.

Influenza vaccinations protect millions of individuals in our society, particularly vulnerable populations such as the elderly. Despite their obvious success, adverse reactions have been reported, with some of these reactions being anecdotal in nature. Doty et al. examine a large sample of patients with chemosensory dysfunction, finding that fewer than 1% attribute their dysfunction to this vaccine. Stauber et al. look at another adverse reaction, finding that factors such as diabetes and probably obesity may contribute to more severe events of angioedema induced by angiotensin-converting enzymes inhibitors (ACEI). They also note that the high recurrence rate of ACEI-induced angioedema preceding subsequent life threatening events points to under-diagnosis of this reaction.

In an effort to control rising healthcare costs, identification of efficient and inefficient practices is paramount in the current political environment. Kennedy and colleagues add to the considerable body of relevant literature, examining at what age the initiation of specific subcutaneous immunotherapy exceeds the cost-effectiveness of lifetime intranasal steroid therapy while Chen et al. conduct a multicenter prospective trial demonstrating its safety.

Dysosmia and dysgeusia can profoundly impact quality of life. Steinbach et al. study their prevalence using objective testing in patients with vascular malformations of the head and neck, finding a significant relationship even when the nose and/or tongue are not malformed. Parikh et al. study another significant topic affecting quality of life and overall health, demonstrating a significantly positive correlation between clinical control of rhinitis symptoms and control of obstructive sleep apnea. This suggests this approach should be emphasized among practitioners in a wide variety of specialties. Turning to obstructive sleep apnea in the pediatric population, Huseni et al. note that children with rhinitis have distinct obstructive sleep apnea features with a higher degree of REM-sleep, suggesting future areas of research in examination of pediatric sleeping disorders.

Diagnostic techniques have rapidly evolved in recent years, offering an important perioperative adjunct to determining optimal medical and surgical strategies. Manjunatha et al. illustrates an exciting potential method of evaluating nasal obstruction, indicating the polyvinylidene fluoride nasal sensor provides comparable results to those gained from the use of peak nasal inspiratory flow measurements. Another analysis notes the utility of pre-operative computed tomography scans in patients undergoing septoplasty to evaluate the grade of deviation and degree of inferior turbinate hypertrophy.

Cadaveric studies offer invaluable insights into potential surgical techniques and play an important role in determining subsequent surgical approaches. Craig et al. describe how upper lateral strut grafts improved patency in cadaveric internal nasal valves, most notably in cadavers with narrow internal nasal valves. Kenyon and Antisdel offer an alternative for patients in need of surgery involving the lateral orbital apex. In their cadaveric study, endoscopic approaches to the lateral orbital apex are explored. The authors conclude that this approach can be considered for patients with irreparably damaged vision and warned that this approach should be considered with caution in patients with intact vision due to the possibility of optic nerve traction. Saedi et al. used spreader flaps in a pilot study including 32 patients, finding this approach has promise. Pagella et al. discuss a conservative alternative in endoscopic treatment of inverted papilloma, noting that pedicle oriented endoscopic surgery potentially offers good disease control, shorter operating time, while sparing uninvolved structures.

An analysis from the Medical University of South Carolina examined skull base thickness in radiologic images of patients with spontaneous cerebrospinal fluid leaks, finding differences, although it is unclear whether such differences predispose patients to leaks rather than just being a consequence of any underlying pathophysiology. Finally, this issue also contains further study of the relationship between chronic adenoid disease and CRS in the pediatric population.
noting that history and physical examination are notoriously unreliable predictors.26

The wide variety of analyses, ranging from those focusing on basic science and translational research to those containing significant clinical findings that can be immediately applied in medical decision making, offer insight into the expanding knowledge base regarding patients with allergic, rhinologic, and skull base pathologies. Our hope is that these manuscripts will not only prove useful to practicing clinicians and scientists, but offer ideas for further scholarship that will continue to expand our understanding of the complex mechanisms underlying allergic, rhinologic, and skull base disorders.

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REFERENCES

1. Drilling A, Morales S, Jardeleza C, et al. Bacteriophage reduces biofilm of Staphylococcus aureus ex vivo isolates from chronic rhinosinusitis patients. Am J Rhinol Allergy 28:3–11, 2014.
2. Hwang JW, Jun YJ, Park SJ, et al. Endogenous production of hydrogen sulfide in human sinus mucosa and its expression levels are altered in patients with chronic rhinosinusitis with and without nasal polyps. Am J Rhinol Allergy 28:12–19, 2014.
3. Batzakakis D, Stathas T, Mastronikolis N, et al. Adhesion molecules as predictors of nasal polyposis recurrence. Am J Rhinol Allergy 28:20–22, 2014.
4. Topal O, Kulaksuzoglu S, and Erbek SS. Oxidative stress and nasal polyps: Does it affect the severity of the disease? Am J Rhinol Allergy 28:e1–e4, 2014.
5. Luukkainen A, Karjalainen J, Hurme M, et al. Relationships of indoleamine 2,3-dioxygenase activity and cofactors with asthma and nasal polyps. Am J Rhinol Allergy 28:e5–e10, 2014.
6. Jeong JH, Yoo HS, Lee SH, et al. Nasal and exhaled nitric oxide in chronic rhinosinusitis with polyps. Am J Rhinol Allergy 28:e11–e16, 2014.
7. Cho S-N, Song C-H, Jin J, et al. Role of staphylococcal enterotoxin B on the differentiation of regulatory T cells in nasal polyposis. Am J Rhinol Allergy 28:e17–e24, 2014.
8. Song S-Y, Chi DH, Bae CH, and Kim Y-D. Staphylococcus enterotoxin A induces MUC5B expression via Toll-like receptor 2, extracellular signal-regulated kinase 1/2, and p38 mitogen-activated protein kinase in human airway epithelial cells. Am J Rhinol Allergy 28:e25–e30, 2014.
9. Pajor AM, Danilewicz M, Stasikowska-Kanicka O, and Józefowicz-Korczyńska M. The immunoexpression of CD34, Bcl-2, and Ki-67 antigens in sinonasal inverted papillomas. Am J Rhinol Allergy 28:e31–e34, 2014.
10. Kang JW, Baek SH, Rha MS, and Kim JH. The effects of alcohol consumption and smoking on allergy risk in Korean adults. Am J Rhinol Allergy 28:e35–e39, 2014.
11. Sedaghat AR, Cunningham MJ, and Ishman SL. Regional and socioeconomic disparities in emergency department use of radiographic imaging for acute pediatric sinusitis. Am J Rhinol Allergy 28:23–28, 2014.
12. Lee JT, and Chiu AG. Topical anti-infective sinonasal irrigations: Update and literature review. Am J Rhinol Allergy 28:29–38, 2014.
13. Sunaryo PL, Svider PF, Husain Q, et al. Schwannomas of the sinonasal tract and anterior skull base: A systematic review of 94 cases. Am J Rhinol Allergy 28:39–49, 2014.
14. Doty RL, Berman AH, Izhar M, et al. Influenza vaccinations and chemosensory function. Am J Rhinol Allergy 28:50–53, 2014.
15. Stauber T, Confino-Cohen R, and Goldberg A. Life-threatening angioedema induced by angiotensin-converting enzyme inhibitors: Characteristics and risk factors. Am J Rhinol Allergy 28:54–58, 2014.
16. Kennedy JL, Robinson D, Christophel J, et al. Decision-making analysis for allergen immunotherapy versus nasal steroids in the treatment of nasal steroid–responsive allergic rhinitis. Am J Rhinol Allergy 28:59–64, 2014.
17. Chen J, Li B, Zhao Y, et al. A prospective multicenter study of systemic reactions in standardized specific immunotherapy for allergic rhinitis in China. Am J Rhinol Allergy 28:e40–e44, 2014.
18. Steinbach S, Fasunla AJ, Lahme CME, et al. Smell and taste in patients with vascular malformation of the extracranial head and neck region. Am J Rhinol Allergy 28:e45–e51, 2014.
19. Parikh NG, Junaid I, Sheinkopf L, et al. Clinical control in the dual diagnosis of obstructive sleep apnea syndrome and rhinitis: A prospective analysis. Am J Rhinol Allergy 28:e52–e55, 2014.
20. Huseni S, Gutierrez MJ, Rodríguez CE, et al. The link between rhinitis and rapid-eye-movement sleep breathing disturbances in children with obstructive sleep apnea. Am J Rhinol Allergy 28:e56–e61, 2014.
21. Manjunatha RG, Rajanna K, Mahapatra RD, and Prakash S. Evaluation of polyvinylidene fluoride nasal sensor to assess deviated nasal septum in comparison with peak nasal inspiratory flow measurements. Am J Rhinol Allergy 28:e62–e67, 2014.
22. Orhan I, Aydin S, Ormeci T, and Yilmaz F. A radiological analysis of inferior turbinate in patients with deviated nasal septum by using computed tomography. Am J Rhinol Allergy 28:e68–e72, 2014.
23. Craig J, Goyal P, and Suryadevara A. Upper lateral strut graft: A technique to improve the internal nasal valve. Am J Rhinol Allergy 28:e65–e69, 2014.
24. Kenyon B, and Antisdell JL. Anatomic evaluation of endoscopic transnasal transorbital approach to the lateral orbital apex. Am J Rhinol Allergy 28:62–65, 2014.
25. Saeli B, Amaly A, Gharavis V, et al. Spreader flaps do not change early functional outcomes in reduction rhinoplasty: A randomized control trial. Am J Rhinol Allergy 28:70–74, 2014.
26. Pagella F, Pusateri A, Giourgos G, et al. Evolution in the treatment of sinonasal inverted papilloma: Pedicle-oriented endoscopic surgery. Am J Rhinol Allergy 28:75–81, 2014.
27. Psaltis AJ, Overton LJ, Thomas WW, III, et al. Differences in skull base thickness in patients with spontaneous cerebrospinal fluid leaks. Am J Rhinol Allergy 28:e73–e79, 2014.
28. Ramadan HH, and Makary CA. Can computed tomography score predict outcome of adenoidectomy for chronic rhinosinusitis in children. Am J Rhinol Allergy 28:e80–e82, 2014.