Diagnosing Asthma with and without Aerosol-Generating Procedures
Drake et al 4243

What is already known about the topic? Asthma diagnostic guidelines recommend using spirometry-based tests to demonstrate variable airflow obstruction. The lack of accessibility to aerosol-generating procedures such as spirometry poses a significant clinical challenge.

What does this article add to our knowledge? We describe an alternative approach to asthma diagnosis that does not require in-clinic aerosol-generating procedures. This algorithm includes audible wheeze, blood eosinophilia, and home peak flow variability. The approach may be a useful tool in “ruling-in” asthma and allow prompt diagnosis and treatment in some patients.

How does this study impact current management guidelines? This alternative algorithm could have a role during the coronavirus disease 2019 pandemic and elsewhere when aerosol-generating procedures are less accessible. This approach had comparable discriminative power to current asthma guidelines, and merits external validation.

The Clinical Implications of Aspergillus Fumigatus Sensitization in Difficult-To-Treat Asthma Patients
Mistry et al 4254

What is already known about this topic? A fumigatus sensitivity has been linked to worse asthma outcomes through adverse-associated clinical phenotypes including allergic bronchopulmonary aspergillosis. However, the clinical relevance and burden of A fumigatus sensitization within the real-life adult population with difficult asthma is unknown.

What does this article add to our knowledge? Stratification of a UK real-life difficult asthma cohort by A fumigatus sensitization identified a more severe airways disease state with few of the comorbidities commonly observed in difficult asthma.

How does this study impact current management guidelines? This study highlights that A fumigatus sensitization status should be a core early assessment in patients with difficult asthma that could then facilitate management measures to potentially prevent lung function impairment and development of structural airways damage.

Anaphylaxis and Pregnancy: A Systematic Review and Call for Public Health Actions
Carra et al 4270

What is already known about this topic? Although rare, anaphylaxis during pregnancy implies a risk to both mothers and newborns.

What does this article add to our knowledge? Risk factors for anaphylaxis during each trimester were identified, such as a history of multiple cesareans deliveries or procedures, personal history of anaphylaxis, and/or allergic reaction to medication without allergy workup.

How does this study impact current management guidelines? Identification of patients who are at risk and bilateral collaboration among different specialists involved in caring for pregnant women should be established to support preventive strategies.

Serum Inhaled Corticosteroid Detection for Monitoring Adherence in Severe Asthma
Alahmadi et al 4279

What is already known about this topic? Adherence to inhaled corticosteroids in asthma is poor, and yet few reliable methods exist to assess adherence in clinic.

What does the article add to our knowledge? Blood detection of budesonide, beclomethasone dipropionate, and fluticasone propionate may represent a new method for monitoring adherence in severe asthma, and (for fluticasone) relate to important markers of disease severity.

How does this study impact current management guidelines? Blood detection of inhaled corticosteroids merits further testing as a potential measure of adherence in severe asthma.
Risk of Neuropsychiatric Diseases According to the Use of a Leukotriene Receptor Antagonist in Middle-Aged and Older Adults with Asthma: A Nationwide Population-Based Study Using Health Claims Data in Korea
Shim et al

What is already known about this topic? There has been increasing concern regarding the neuropsychiatric (NP) adverse reactions as the U.S. Food and Drug Administration stepped up warnings on montelukast in March 2020. However, there is insufficient evidence for this association, especially in adults.

What does this article add to our knowledge? This study did not show any association between the use of a leukotriene receptor antagonist and the occurrence of NP diseases in Korean adult asthmatics aged 40 or older.

How does this study impact current management guidelines? The results could be one of the evidence for alleviating concerns about the occurrence of NP diseases owing to a leukotriene receptor antagonist in adult asthma patients.

Intimate Partner Violence and Adult Asthma Morbidity: A Population-Based Study
Wang et al

What is already known about this topic? Exposure to intimate partner violence (IPV) is associated with higher asthma prevalence in adults and their children.

What does this article add to our knowledge? This is the first study to examine the association of IPV with adult asthma morbidity using a large population-based dataset.

How does this study impact current management guidelines? Insight into IPV, a prevalent but underaddressed public health issue, elucidates potential etiologies behind difficult-to-control asthma, and will help to improve tailored evaluation and therapies.

The Feasibility of a Lifestyle Physical Activity Intervention for Black Women with Asthma
Nyenhuis et al

What is already known about this topic? Black women experience disparities in both physical inactivity and asthma relative to their White counterparts. Lifestyle interventions tailored to this population are needed.

What does this article add to our knowledge? A lifestyle intervention culturally tailored for Black women with asthma was feasible to conduct and had high acceptability. Improvements in asthma control and quality of life were also observed.

How does this study impact current management guidelines? Addressing physical inactivity and poor asthma outcomes of Black women may be delivered through a lifestyle physical activity intervention that is culturally tailored to the unique needs of Black women.

Out-of-Pocket Spending for Asthma-Related Care Among Commercially Insured Patients, 2004-2016
Sinaiko et al

What is already known about this topic? Patients report that out-of-pocket costs are a noteworthy burden and barrier to asthma treatment, but comprehensive data on asthma-related out-of-pocket costs are limited.

What does this article add to our knowledge? Most of asthma-related out-of-pocket spending was on medications, but patients in lower-income areas had greater spending on high-acuity care and greater cost burden as a percent of income than those in higher-income areas.

How does this study impact current management guidelines? Understanding asthma-related out-of-pocket spending can impact how clinicians make asthma management plans with patients and inform strategies that reduce cost burden while optimizing medication adherence and timely care.
Efficacy of Tezepelumab in Patients with Severe, Uncontrolled Asthma and Perennial Allergy
Corren et al 4334

What is already known about this topic? Allergic asthma is a common phenotype of severe asthma; tezepelumab is an anti–thymic stromal lymphopoietin biologic therapy in development for the treatment of severe asthma.

What does this article add to our knowledge? Our analysis of participants in the phase IIb PATHWAY study shows that tezepelumab reduced exacerbations, improved lung function, and reduced type 2 biomarkers versus placebo in patients with severe, uncontrolled asthma with or without perennial allergy.

How does this study impact current management guidelines? Tezepelumab may be a valuable treatment option for patients with severe allergic asthma, as well as for those without allergy.

Factors Associated with Asthma Exacerbations During Pregnancy
Bokern et al 4343

What is already known about this topic? Up to 45% of women experience an asthma exacerbation during pregnancy that is associated with adverse pregnancy outcomes.

What does this article add to our knowledge? A history of asthma exacerbations and poor asthma control despite treatment with moderate-to high-dose inhaled corticosteroids or long-acting β-agonists predict severe asthma exacerbations during pregnancy.

How does this study impact current management guidelines? Identifying a history of exacerbation and poor asthma symptom control as measured by the Asthma Control Questionnaire, despite treatment with inhaled corticosteroids or long-acting β-agonists identifies those at high risk for exacerbation during pregnancy. Factors associated with asthma exacerbations during pregnancy may help health care professionals optimize asthma management during pregnancy.

Asthma Phenotyping in Primary Care: Applying the International Severe Asthma Registry Eosinophil Phenotype Algorithm Across All Asthma Severities
Kerkhof et al 4353

What is already known about this topic? Asthma remains poorly controlled and characterized in primary care. Many patients are given the diagnosis of asthma and receive regular asthma treatment, in accordance with a one-treatment-fits-all, step-up/step-down, guideline-directed approach, but with little clinical benefit.

What does this article add to our knowledge? Eosinophilic asthma predominates in UK primary care and is associated with a greater likelihood of having asthma attacks, reduced lung function despite a significantly greater steroid burden, and greater health care resource use.

How does this study impact current management guidelines? The eosinophil phenotype gradient algorithm will enable primary care physicians to identify and categorize asthma patients into those with and without eosinophilic asthma, and when appropriate, refer patients for phenotype-targeted treatment.

Benralizumab Effectiveness in Severe Eosinophilic Asthma with and without Chronic Rhinosinusitis with Nasal Polyps: A Real-World Multicenter Study
Nolasco et al 4371

What is already known about this topic? Benralizumab was shown to be effective in patients with severe eosinophilic asthma in clinical trials. However, real-world data in patients with the copresence of chronic rhinosinusitis with nasal polyps are lacking.

What does this article add to our knowledge? This study represents the largest real-world evidence so far, assessing the effectiveness of benralizumab in patients with severe eosinophilic asthma with or without chronic rhinosinusitis with nasal polyps on clinical, functional, laboratory parameters, and nasal symptoms.

How does this study impact current management guidelines? Benralizumab showed rapid effectiveness in the management of severe eosinophilic asthma in everyday clinical practice. Nasal polyposis could be considered a treatable trait because affected patients experienced improvements in nasal symptoms, asthma control, and respiratory function.
Integrated Safety and Efficacy Among Patients Receiving Benralizumab for Up to 5 Years
Korn et al

What is already known about this topic? The efficacy and safety of benralizumab were demonstrated through phase 3 pivotal trials lasting 28 to 56 weeks. Previous long-term results with benralizumab are limited to 2 years of follow-up.

What does this article add to our knowledge? Results from this integrated analysis expand on previous studies by demonstrating the long-term safety and efficacy of benralizumab among patients treated for up to 5 years.

How does this study impact current management guidelines? Current guidelines do not consider the long-term impact of eliminating exacerbations in patients. Given the deleterious effects of exacerbations on disease progression, guidelines should consider zero exacerbations as an indication and a goal for biologics.

Evaluation of Risk Scores to Predict Pediatric Severe Asthma Exacerbations
Niu et al

What is already known about this topic? Predicting which children are at the highest risk of asthma exacerbation is difficult given heterogeneity in phenotypes and triggers. No single tool is accepted that accurately predicts risk of exacerbation using electronic health record data.

What does this article add to our knowledge? Data from electronic health records may be successfully used to predict risk of exacerbation in children of various age groups with asthma, and this approach to risk stratification may be useful in asthma management decisions.

How does this study impact current management guidelines? This study provides a practical tool that may be used in the clinical setting to determine risk of exacerbation in children with asthma based on a variety of clinical characteristics and laboratory findings.

Indoor Environmental Factors May Modify the Response to Mouse Allergen Reduction Among Mouse-Sensitized and Exposed Children with Persistent Asthma
Sadreameli et al

What is already known about this topic? Sensitization and exposure to mouse allergen is associated with asthma morbidity among low-income, minority children living in urban environments. Reduction of household mouse allergen is associated with improvements in asthma symptoms and exacerbations.

What does this article add to our knowledge? Higher baseline mouse allergen and lower particulate matter 10 μm or less (PM10) levels were associated with a greater response to mouse allergen reduction for many outcomes. Sensitization and exposure to other indoor allergens did not consistently modify the response.

How does this study impact current management guidelines? Current U.S. asthma guidelines recommend allergen reduction in individuals with mouse sensitization. These data suggest that mouse allergen reduction is beneficial even with high levels of mouse allergen; concomitant PM10 reduction may potentiate the benefit.

Development and Validation of a Mobile Clinical Decision Support Tool for the Diagnosis of Drug Allergy in Adults: The Drug Allergy App
Elkhalifa et al

What is already known about this topic? The burden and impact of penicillin and antibiotic allergies have been established by many studies. However, the main problem is how to implement a safe clinical decision support tool to delabel patients with inaccurate penicillin allergy.

What does this article add to our knowledge? This article describes the development and retrospective validation of a mobile clinical decision support tool for the diagnosis of drug allergy for use by clinicians to delabel individuals with an inaccurate penicillin allergy label.

How does this study impact current management guidelines? The Drug Allergy App may represent a useful clinical decision support tool for non-allergists to diagnose drug allergy correctly and support appropriate antibiotic prescribing as an attempt to address antimicrobial stewardship.
Diagnostic Approach of Hypersensitivity Reactions to Cefazolin in a Large Prospective Cohort
Bogas et al 4421

What is already known about this topic? The diagnosis of cefazolin-induced reactions is complex because of uncertainties concerning the optimal concentration for skin tests. In vitro tests are not commercially available or validated, and provocation tests can be contraindicated owing to the severity of reactions.

What does this article add to our knowledge? Skin tests using cefazolin at 20 mg/mL enabled half of the patients to receive a diagnosis. Basophil activation test sensitivity was 66.7%; it was positive in 75% of patients with negative skin tests.

How does this study impact current management guidelines? Skin tests allowed half of patients to receive a diagnosis when using cefazolin at 20 mg/mL. Basophil activation test is a promising diagnostic tool, especially in patients with severe reactions and negative skin tests.

Safety and Efficacy of Mepolizumab in Hypereosinophilic Syndrome: An Open-Label Extension Study
Gleich et al 4431

What is already known about this topic? A phase III study demonstrated that compared with placebo, 4-weekly add-on mepolizumab (300 mg subcutaneously) reduced flares in patients with uncontrolled FIP1-like-1-platelet-derived growth factor receptor a (FIP1L1-PDGFRA)-negative hypereosinophilic syndrome (HES), with a positive benefit–risk profile.

What does this article add to our knowledge? This open-label extension study found no new safety signals with mepolizumab treatment in patients with FIP1L1-PDGFRA-negative HES. Moreover, mepolizumab continued to control flares and blood eosinophil counts after 52 weeks of continuous treatment.

How does this study impact current management guidelines? Findings from this open-label extension study provide further evidence that patients with FIP1L1-PDGFRA-negative HES are likely to benefit from treatment with mepolizumab and may be able to reduce oral corticosteroid use.

Racial and Ethnic Disparities in the Research and Care of Hereditary Angioedema Patients in the United States
Sylvestre et al 4441

What is already known about this topic? Premarking clinical trials on hereditary angioedema (HAE) have demonstrated underrepresentation of minorities, suggesting a risk for real-world disparate diagnosis and management. Anxiety and depressive disorders are more prevalent in patients with HAE.

What does this article add to our knowledge? Hispanic patients are underdiagnosed with HAE. Black patients with HAE may experience disparate prescription practices. Except for higher anxiety prevalence among White patients with HAE, mental health disorders were equally distributed across the different HAE racial and ethnic groups.

How does this study impact current management guidelines? Measures are needed to enhance minority involvement in HAE clinical research. Attention should be paid to ensure Hispanic patients with HAE are identified and treated.

Efficacy of Subcutaneous and Sublingual Immunotherapy for House Dust Mite Allergy: A Network Meta-Analysis—Based Comparison
Kim et al 4450

What is already known about this topic? Subcutaneous and sublingual allergen immunotherapies are effective therapeutic arms for house dust mite allergy, but comparisons between modalities are limited.

What does this article add to our knowledge? To the authors’ knowledge, this is the first meta-analysis to provide an indirect comparison of the clinical efficacy of immunotherapy modalities with house dust mite extracts. Subcutaneous immunotherapy has been shown to be more effective than sublingual immunotherapy in reducing allergic rhinitis symptoms.

How does this study impact current management guidelines? This study provides both direct and indirect evidence to assist clinicians in selecting an immunotherapy modality for the treatment of house dust mite allergy. Well-powered, direct, head-to-head trials are needed to validate current results.
Assessment of Osteoporosis and Fracture Risk in Mastocytosis within a North American Cohort
Makovoz et al

What is already known about this topic? Osteoporosis and fracture risk is increased among people with systemic mastocytosis, and existing studies focus on European cohorts. Serum tryptase, bone marrow findings, dual-energy x-ray absorptiometry (DXA) scans, and bone turnover markers assess disease severity and bone health.

What does this article add to our knowledge? In this North American cohort, we observed lower trabecular bone scores among patients with fractures. We designed a predictive model identifying age, DXA spine T-scores, and alkaline phosphatase as predictors of fracture incidence.

How does this study impact current management guidelines? We designed an interactive calculator based on our predictive model, which allows physicians to use patients’ age, DXA spine scores, and alkaline phosphatase together for improved fracture risk prediction.