Asthma Disparities During the COVID-19 Pandemic: A Survey of Patients and Physicians
Baptist et al 3371

What is already known about this topic? There is a disproportionate impact of coronavirus disease 2019 (COVID-19) on minority individuals. For minority individuals with asthma, the extent of, and reasons for, these disparities is not fully known.

What does this article add to our knowledge? Minority individuals with asthma are more likely to be affected (directly or indirectly) by COVID-19. Differences in attitudes toward COVID-19 between minority and white individuals disappear once socioeconomic and asthma characteristics are controlled.

How does this study impact current management guidelines? Health disparities exist for patients with asthma during the COVID-19 pandemic, and addressing underlying socioeconomic factors as well as institutional racism can help to decrease these disparities.

Pediatric Asthma Health Care Utilization, Viral Testing, and Air Pollution Changes During the COVID-19 Pandemic
Taquechel et al 3378

What is already known about this topic? The coronavirus disease 2019 pandemic caused dramatic changes to daily routines and health care delivery in the United States.

What does this article add to our knowledge? Coronavirus disease 2019 public health interventions were accompanied by a reduction in pediatric asthma encounters and systemic steroid prescriptions. Decreased rhinovirus infections may have contributed to this apparent reduction in asthma exacerbations, although changes in 4 criteria air pollutants were not significantly different than historical trends.

How does this study impact current management guidelines? Our findings reinforce the value of preventative measures for asthma control, especially those designed to limit transmission of respiratory viruses.

Risk Factors and Characteristics of Biphasic Anaphylaxis
Kraft et al 3388

What is already known about this topic? A biphasic course has been reported in 2% to 20% of patients with anaphylaxis. Multiple risk factors for biphasic reactions have been suggested. However, because of limited data, this phenotype remains not well understood.

What does this article add to our knowledge? The identified risk factors for biphasic anaphylaxis provide new insights into the understanding of these reactions and can support clinicians in the risk assessment of anaphylactic patients.

How does this study impact current management guidelines? A prolonged observation period should be considered in anaphylaxis presenting with severe and/or multiorgan reactions, caused by an unknown elicitor or peanut/tree nut and a chronic urticaria or exercise as a cofactor.
New Perspectives on Difficult Asthma; Sex and Age of Asthma-Onset Based Phenotypes
Azim et al

What is already known about this topic? Asthma shows differing sex associations across the life course, with male predominance in childhood switching to female predominance in adulthood. How such disease associations relate to more difficult asthma in adulthood is unclear.

What does this article add to our knowledge? This real-world study shows that stratifying difficult asthma by sex and age of asthma onset identifies clinically important phenotypes that are currently poorly recognized including more common early-onset female, and more severe adult-onset male, difficult asthma.

How does this study impact current management guidelines? This study describes clinical features of difficult asthma from a new phenotypic perspective. By characterizing these novel phenotypes, and their multimorbid nature, this study can guide better identification and management of patients with difficult asthma.

Glycated Hemoglobin A1c, Lung Function, and Hospitalizations Among Adults with Asthma
Yang et al

What is already known about this topic? Prediabetes and diabetes have been associated with asthma.

What does this article add to our knowledge? This study shows that an elevated glycated hemoglobin A1c level is associated with asthma-related hospitalizations and lower FEV1 and forced vital capacity among adults with asthma but no diagnosis of diabetes mellitus.

How does this study impact current management guidelines? Asthmatic patients with an elevated glycated hemoglobin A1c level, even if not diagnosed with diabetes, should be monitored closely because of a potential increased risk of asthma-related hospitalizations.

A Feasibility Study of a Randomized Controlled Trial of Asthma-Tailored Pulmonary Rehabilitation Compared with Usual Care in Adults with Severe Asthma
Majd et al

What is already known about this topic? Adults with severe asthma have lower cardiorespiratory fitness and physical activity levels compared with their healthy peers with an increased risk of heart disease and diabetes despite recent pharmaceutical advances, demonstrating a large unmet need.

What does this article add to our knowledge? We report the first clinical trial involving exercise training compared with usual care for adults with severe asthma. Although asthma-tailored pulmonary rehabilitation may be efficacious, the mode of delivery was not acceptable for some patients.

How does this study impact current management guidelines? These initial results support the need for exercise training and education interventions for adults with severe asthma, but the model of delivery needs further development to improve acceptability for this complex group of patients.

Omalizumab Is an Effective Intervention in Severe Asthma with Fungal Sensitization
Wark et al

What is already known about this topic? Fungal sensitization and allergic bronchopulmonary aspergillosis are important complications of asthma, associated with more exacerbations and chronic airway changes such as bronchiectasis. Omalizumab is an effective intervention for severe allergic asthma, although its role in fungal-sensitized asthma is unclear.

What does this article add to our knowledge? Using registry data, we demonstrate that those with severe asthma and fungal sensitization are just as likely to respond to treatment as those without fungal sensitization. The response in those with allergic bronchopulmonary aspergillosis appeared just as effective, although there were few subjects.

How does this study impact current management guidelines? Omalizumab is an effective treatment in those with severe asthma and fungal sensitization, and it should be considered as an add-on therapy, improving asthma symptoms and reducing prednisone use and exacerbation frequency.
Efficacy of Reslizumab Treatment in Exacerbation-Prone Patients with Severe Eosinophilic Asthma
Wechsler et al

What is already known about this topic? Patients with severe eosinophilic asthma have increased exacerbation rates, impaired lung function, and lower quality of life compared with noneosinophilic asthma. Reslizumab has shown efficacy and safety in patients with uncontrolled moderate-to-severe asthma.

What does this article add to our knowledge? Intravenous reslizumab (3.0 mg/kg every 4 weeks) showed significant clinical benefits compared with placebo across a range of endpoints in exacerbation-prone patients with severe eosinophilic asthma.

How does this study impact current management guidelines? Our findings indicate that patients with severe eosinophilic asthma and a recent history of multiple exacerbations may obtain significant benefit from intravenous reslizumab treatment, thus supporting reslizumab add-on therapy in these patients.

Clinical and Economic Outcomes in Patients with Persistent Asthma Who Attain Healthcare Effectiveness and Data Information Set Measures
Mosnaim et al

What is already known about this topic? Attainment of the asthma medication ratio (AMR) is associated with improved clinical outcomes and reduced costs, but few studies have evaluated the outcomes for patients attaining the medication management for people with asthma (MMA) measure.

What does this article add to our knowledge? MMA and/or AMR attainment was associated with significantly improved clinical outcomes. Although both MMA and AMR attainment were associated with lower exacerbation costs, only AMR attainment was associated with lower overall asthma-related costs.

How does this study impact current management guidelines? This real-world study highlights the importance of monitoring adherence to treatment and rescue inhaler use in patients with persistent asthma. Close monitoring is likely to improve adherence and, therefore, improve clinical outcomes and reduce costs.

Systemic Corticosteroid-Related Complications and Costs in Adults with Persistent Asthma
Zeiger et al

What is already known about this topic? Prior studies have shown that high use of systemic corticosteroids in the management of asthma is associated with complications and high health care costs.

What does this article add to our knowledge? The complications and costs associated with systemic corticosteroid use exist for patients with both 1 to 3 claims and 4+ prescription claims, although the burden increases with utilization. This burden also increases over time.

How does this study impact current management guidelines? These results highlight the clinical and economic consequences and cost of systemic corticosteroid use in persistent asthma and raise awareness of the potential benefits of minimizing systemic corticosteroid use in persistent asthma whenever possible.

Patient Advocates for Low-Income Adults with Moderate to Severe Asthma: A Randomized Clinical Trial
Apter et al

What is already known about this topic? Low-income and minority adults with asthma suffer worse asthma outcomes than more advantaged groups.

What does this article add to our knowledge? An intervention that addresses patient-clinician communication may be helpful if other barriers such as transportation difficulties can be overcome.

How does this study impact current management guidelines? This study contributes to the mounting evidence that guidelines must place more emphasis on evaluating and addressing social determinants of health such as communication and transportation.
**Biomarkers of Type 2 Airway Inflammation as Predictors of Loss of Asthma Control During Step-Down Therapy for Well-Controlled Disease: The Long-Acting Beta-Agonist Step-Down Study (LASST)**

*Bose et al* 3474

*What is already known about this topic?* The use of biomarkers of type 2 inflammation has been suggested to guide escalation of asthma therapy in uncontrolled disease. However, whether these biomarkers can also predict loss of control in those patients being stepped down for well-controlled asthma remains unclear.

*What does this article add to our knowledge?* Neither baseline type 2 inflammatory biomarkers such as serum aeroallergen multiallergy screening tests and eosinophil peroxidase assays nor baseline or serial measures of fractional exhaled nitric oxide were clear predictors of treatment failure in those with well-controlled asthma, regardless of maintenance or reduction of controller therapy.

*How does this study impact current management guidelines?* Type 2 inflammatory biomarkers may not be a robust predictor of loss of asthma control among well-controlled patients. Our results highlight the need to identify alternative means of predicting treatment failure in well-controlled patients undergoing step-down of their treatment.

**SABA Reliance Questionnaire (SRQ): Identifying Patient Beliefs Underpinning Reliever Overreliance in Asthma**

*Chan et al* 3482

*What is already known about the topic?* There is a call to move away from the use of short-acting beta2 agonists (SABA) alone to manage asthma. Many patients continue to be overly reliant on and overuse SABA. No current assessment exists to evaluate the patient-related risk of SABA overreliance.

*What does this article add to our knowledge?* This article presents a novel self-assessment tool—the SABA Reliance Questionnaire—to assess perceptions of SABA that can drive overreliance and overuse of SABA. The article reports on the psychometric properties of the SABA Reliance Questionnaire, providing evidence of validity and internal reliability.

*How does this study impact current management guidelines?* Traditional assessments of asthma control and medication use do not shed any light on the factors influencing asthma outcomes. The SABA Reliance Questionnaire can measure the patient beliefs that drive medication use and asthma control, thus informing interventions to reduce inappropriate medication use and improve control.


*Howley et al* 3490

*What is already known about this topic?* Evidence regarding associations between maternal asthma medication use and birth defects is mixed. Few studies have examined the association between types of asthma medications and specific birth defects.

*What does this article add to our knowledge?* New and previously reported associations between asthma medications and specific birth defects were observed, including moderate elevations for bronchodilators. In addition, a few associations remained elevated after partially accounting for indication.

*How does this study impact current management guidelines?* Most birth defects were not associated with asthma medications, supporting guidelines that pregnant women maintain asthma treatment and consult providers before starting or stopping medications. Additional evidence about these specific associations will inform clinical recommendations.

**A Preliminary 18F-FDG-PET/MRI Study Shows Increased Vascular Inflammation in Moderate-to-Severe Atopic Dermatitis**

*Ungar et al* 3500

*What is already known about this topic?* In moderate-to-severe atopic dermatitis (AD), elevated systemic immune activation is increasingly recognized, and epidemiological studies suggest increased cardiovascular risk.

*What does this article add to our knowledge?* This study is the first to show increased cardiovascular inflammation using fluorodeoxyglucose-positron emission tomography/magnetic resonance imaging in moderate-to-severe AD.

*How does this study impact current management guidelines?* This study suggests that taking into account the potential for cardiovascular inflammation may be warranted in deciding on the need to use systemic treatment.
The Psychosocial Impact of Food Protein-Induced Enterocolitis Syndrome
Maciag et al 3508

What is already known about this topic? Food protein—induced enterocolitis syndrome (FPIES) is a non-IgE, cell-mediated food allergy. Despite recent advances in understanding medical aspects of the condition, little is known about its psychosocial impact.

What does this article add to our knowledge? There is a high degree of psychosocial burden among caregivers of children with FPIES. Caregivers with lower income, affected children avoiding multiple foods, or avoiding cow’s milk are at higher risk.

How does this study impact current management guidelines? Children with FPIES and their caregivers have increased psychosocial stress. Additional research into the psychosocial impact of FPIES is needed to develop practical interventions to better support families.

Community-Based Adverse Food Reactions and Anaphylaxis in Children with IgE-Mediated Food Allergy at Age 6 Years: A Population-Based Study
Wang et al 3515

What is already known about this topic? The adverse food reactions in adolescents (10-14 years) with food allergy were reported as 44%, whereas data on younger children are limited.

What does this article add to our knowledge? This study shows that adverse food reactions occurred in almost half of food-allergic 6-year-old-children and anaphylaxis occurred in 1 of 10 children. Nearly half the anaphylaxis episodes were not recognized by parents, and adrenaline autoinjectors were underused.

How does this study impact current management guidelines? Anaphylaxis was poorly recognized and treated by parents, highlighting the need for improved education on the recognition and management of adverse food reactions and anaphylaxis for parents of young children with food allergy.

Diagnostic Modalities Based on Flow Cytometry for Chronic Granulomatous Disease: A Multicenter Study in a Well-Defined Cohort
Baris et al 3525

What is already known about this topic? Chronic granulomatous disease is caused by mutations affecting subunits of the nicotinamide adenine dinucleotide phosphate oxidase complex. It is characterized by susceptibility to severe infections such as pneumonia, cutaneous and deep tissue abscesses, lymphadenitis, osteomyelitis, and septicemia in addition to inflammatory manifestations. Assessment of the nicotinamide adenine dinucleotide phosphate oxidase function by the dihydrorhodamine test and screening for subunit mutations by genetic analysis help establish the diagnosis.

What does this article add to our knowledge? A flow cytometry—based algorithm facilitates the diagnosis of chronic granulomatous disease by rapidly identifying the defective nicotinamide adenine dinucleotide phosphate oxidase subunits. The same method also detects the carrier status by offering a range of expression values in comparison with healthy controls.

How does this study impact current management guidelines? The results of this study will be useful for the early diagnosis and treatment of chronic granulomatous disease by providing flow cytometry—based algorithm for targeted gene sequencing.

Defective FAS-Mediated Apoptosis and Immune Dysregulation in Gaucher Disease
Miano et al 3535

What is already known about this topic? To the best of our knowledge, no data have ever been published on apoptosis function in patients with Gaucher disease (GD).

What does this article add to our knowledge? Apoptosis impairment can partially explain the immune dysregulation features of patients with GD.

How does this study impact current management guidelines? Because of overlapping clinical and immunological features, diagnostic workup of immune dysregulation syndromes should include GD screening.
Acetaminophen Inhibits the Neutrophil Oxidative Burst: Implications for Diagnostic Testing
Almutairi et al 3543

What is already known about this topic? The dihydrorhodamine assay is a widely used clinical laboratory test for chronic granulomatous disease. In vitro studies suggest that acetaminophen may inhibit the neutrophil oxidative burst. The effects of acetaminophen treatment on clinical testing have not been evaluated.

What does this article add to our knowledge? Within 24 hours of acetaminophen intake, the neutrophil oxidative burst in healthy individuals was reduced, but returned to normal levels after 24 hours. About 5% of hospitalized patients continued to have abnormal dihydrorhodamine testing more than 24 hours after receiving acetaminophen.

How does this study impact current management guidelines? Patients being treated with acetaminophen may have decreased neutrophil oxidative activity, thereby prompting repeat testing and evaluation for chronic granulomatous disease. Individuals undergoing dihydrorhodamine testing should avoid acetaminophen for at least 24 hours before testing.

Hereditary Alpha-Tryptasemia: UK Prevalence and Variability in Disease Expression
Robey et al 3549

What is already known about this topic? Hereditary alpha-tryptasemia due to tandem duplications or triplications of the alpha-tryptase encoding sequence of tryptase alpha/beta 1 is a recently discovered genetic trait associated with elevated basal mast cell tryptase concentrations and a constellation of clinical features.

What does this article add to our knowledge? One in 20 individuals in the United Kingdom has a duplication of the alpha-tryptase encoding sequence of tryptase alpha/beta 1. Although mast cell tryptase level is significantly higher, the clinical spectrum of disease is variable and may not be predicted by alpha copy number.

How does this study impact current management guidelines? Hereditary alpha-tryptasemia is common, and should be considered in all patients presenting with a mast cell tryptase level of greater than or equal to 8.0 ng/mL. Clinical features are variable and individuals may be asymptomatic.

Fracture Risk Reduction by Bisphosphonates in Mastocytosis?
Onnes et al 3557

What is already known about this topic? Patients with indolent systemic mastocytosis are at high risk of fragility fractures.

What does this article add to our knowledge? The risk of fragility fractures remains high in spite of bisphosphonate treatment.

How does this study impact current management guidelines? These findings highlight the need for further interventional studies on the matter.

High Discontinuation Rates of Peroral ASA Treatment for CRSwNP: A Real-World Multicenter Study of 171 N-ERD Patients
Laulajainen-Hongisto et al 3565

What is already known about this topic? Aspirin treatment after desensitization (ATAD) is a treatment option for uncontrolled nonsteroidal anti-inflammatory drug exacerbated respiratory disease.

What does this article add to our knowledge? Yet, in our population, most patients did not benefit from ATAD and discontinued it.

How does this study impact current management guidelines? ATAD patients must be followed, and their treatment response evaluated frequently.
Clinical Control of CSU with Antihistamines Allows for Tolerance of NSAID-Exacerbated Cutaneous Disease
Sánchez et al

What is already known about this topic? A large number of patients with chronic spontaneous urticaria (CSU) experience exacerbations after nonsteroidal anti-inflammatory drug (NSAID) intake. International management guidelines propose that patients with CSU avoid NSAID use; however, this can be quite difficult for patients.

What does this article add to our knowledge? The use of antihistamines can allow for clinical control of CSU and prevent NSAID-exacerbated reactions in patients with CSU.

How does this study impact current management guidelines? The use of antihistamines prevents NSAID-exacerbated reactions in many patients with CSU, so their continued use could remove the need for NSAID restrictions. Challenge tests can be used as a diagnostic tool for NSAID reactions and to confirm whether antihistamines induce tolerance to NSAIDs.