Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company’s public news and information website.

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**Chronic Respiratory Diseases and the Outcomes of COVID-19: A Nationwide Retrospective Cohort Study of 39,420 Cases**

**Guan et al 2645**

**What is already known on this topic?** The impact of chronic respiratory diseases (CRD) on severe coronavirus disease 2019 (COVID-19) and the risk of death remains controversial.

**What does this article add to our knowledge?** Patients with chronic obstructive pulmonary disease (COPD) and asthma were more likely to reach the composite endpoint (needing invasive ventilation, admission to intensive care unit, or death within 30 days after hospitalization) compared with those without, after adjusting for age, sex, and other systemic comorbidities. However, patients with CRD did not have an increased risk of death compared with those without.

**How does this study impact current management guidelines?** Both COPD and asthma are important risk factors of poor clinical outcomes but not death in patients with COVID-19.

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**A Cost-Effectiveness Evaluation of Hospitalizations, Fatalities, and Economic Outcomes Associated with Universal Versus Anaphylaxis Risk-Stratified COVID-19 Vaccination Strategies**

**Shaker et al 2658**

**What is already known about this topic?** Despite robust safety data in the randomized controlled trial, allergic reactions suspicious for anaphylaxis have been reported with early Pfizer-BioNTech and Moderna coronavirus disease 2019 (COVID-19) vaccine administration in the United Kingdom, Canada, and the United States.

**What does this article add to our knowledge?** In a cost-effectiveness model comparing universal versus risk-stratified vaccination, universal vaccination is cost saving and provides superior health outcomes. With low COVID-19 risk and vaccine-associated anaphylaxis rates higher than 0.8%, a risk-stratified approach can be cost-effective.

**How does this study impact current management guidelines?** Approaches to COVID-19 vaccination will be influenced by vaccine-associated anaphylaxis risk and COVID-19 infection risk. A universal vaccination model provides superior health outcomes to a risk-stratified approach, unless vaccine anaphylaxis risk surpasses 0.8%.

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**Impact of Rapid Transition to Telemedicine-Based Delivery on Allergy/Immunology Care During COVID-19**

**Tsao et al 2672**

**What is already known about this topic?** The use of telemedicine in allergy/immunology has been increasing. However, the effect of a rapid and wide-scale adoption of telemedicine as necessitated by the coronavirus disease 2019 pandemic on allergy/immunology patient access and outcomes remains largely unknown.

**What does this article add to our knowledge?** Video visits followed by in-person visits dedicated to diagnostic testing facilitated ongoing allergy/immunology care during the pandemic. However, there was decreased access for nonwhite, non–English-speaking, and Medicaid-insured patients and decreased completion of skin testing.

**How does this study impact current management guidelines?** Screening and appropriate triage of patients at high risk of being unable to complete video visits or return for follow-up testing is needed to ensure that telemedicine does not exacerbate existing health disparities in allergy/immunology care.
Cluster Analysis of Inflammatory Biomarker Expression in the International Severe Asthma Registry
Denton et al 2680

What is already known about this topic? Asthma is now understood to encompass a variety of distinct clinical phenotypes, likely arising from different pathological mechanisms.

What does this article add to our knowledge? In a large international severe asthma cohort, distinct clusters according to biomarker expression exhibited unique clinical characteristics, suggesting the occurrence of discrete patterns of underlying inflammatory pathway activation.

How does this study impact current management guidelines? Understanding more about distinct patterns of underlying inflammatory pathway activation in individual severe asthma patients allows clinicians to tailor targeted severe asthma therapies such as monoclonal biologics, furthering precision medicine for severe asthma.

Factors Associated with Frequent Exacerbations in the UK Severe Asthma Registry
Yang et al 2691

What is already known about this topic? Risk factors for frequent asthma exacerbations include high T2 biomarkers (fractional exhaled nitric oxide and blood eosinophil count) and asthma-associated conditions (obesity and rhinitis) in clinical trial patients or asthma populations with mixed disease severity.

What does this article add to our knowledge? Poor symptom control has the strongest correlation with frequent exacerbations in patients with severe asthma, good adherence, and treated comorbidities. The relationship between T2-high biomarkers and frequent exacerbations is less apparent in patients on maintenance oral corticosteroids.

How does this study impact current management guidelines? Tools to aid identification of poor symptom control in severe asthma are key to identifying patients with higher risk of frequent exacerbations.

Real-World Effectiveness of Omalizumab in Severe Allergic Asthma: A Meta-Analysis of Observational Studies
Bousquet et al 2702

What is already known about this topic? Omalizumab, an anti-IgE monoclonal antibody, has been shown to be effective and safe in patients with moderate-to-severe allergic asthma in both randomized and real-world studies.

What does this article add to our knowledge? Add-on omalizumab consistently improved treatment effectiveness, lung function, and patient-reported outcomes, and reduced the rate of severe exacerbations, oral corticosteroid use, health care resource utilization, and school/workdays absenteeism in real-life settings.

How does this study impact current management guidelines? This meta-analysis of real-world data demonstrated the effectiveness of omalizumab in the real-life practice.

Mepolizumab and Oral Corticosteroid Stewardship: Data from the Australian Mepolizumab Registry
Thomas et al 2715

What is already known about this topic? Although oral corticosteroids (OCS) have been an integral part of severe asthma management, they carry serious health risks, and minimization of patient exposure to them is the key goal of OCS stewardship initiatives.

What does this article add to our knowledge? At baseline, patients in the Australian Mepolizumab Registry represented a high-burden OCS cohort with extreme risk of complications. Mepolizumab therapy minimized OCS exposure, confirming the pivotal role of mepolizumab in OCS stewardship initiatives.

How does this study impact current management guidelines? The extremely high OCS burden among this population requires urgent attention. OCS-sparing agents such as mepolizumab should be considered to minimize the adverse health impact of OCS and promote OCS stewardship.
Development of a Tool to Measure the Clinical Response to Biologic Therapy in Uncontrolled Severe Asthma: The FEV1, Exacerbations, Oral Corticosteroids, Symptoms Score
Pérez de Llano et al 2725

What is already known about this topic? There is a lack of tools to quantify the response to monoclonal antibodies (mAbs) holistically in severe uncontrolled asthma patients.

What does this article add to our knowledge? We have employed a structured, transparent, participative, consistent, and legitimate methodology to develop a score to quantify the response to mAbs.

How does this study impact current management guidelines? This score reflects how much a given asthmatic improves with a mAb. It might be useful to guide therapeutic decisions in patients who achieve an intermediate response and in a head-to-head comparison of mAbs effectiveness.

Patient-Selected Treatment Goals in Severe Asthma
Mulvey et al 2732

What is already known about this topic? Guidelines state that clinicians should elicitz patients’ treatment goals as discordance between patient and clinician treatment aims may result in poor adherence to treatment. However, little information is available on patient goals in asthma.

What does this article add to our knowledge? This paper identified treatment goal categories in asthma previously undescribed. Global Initiative for Asthma clinical asthma management–aligned goals are more likely to be achieved.

How does this study impact current management guidelines? The additional goal categories may be used by clinicians in the development of new treatment strategies. Treatment adherence findings may aid in the development of strategies to increase engagement with asthma treatment.

Asthma Patients Who Stop Asthma Biologics Have a Similar Risk of Asthma Exacerbations as Those Who Continue Asthma Biologics
Jeffery et al 2742

What is already known about this topic? Clinical trial data suggest that the risk for asthma exacerbation may increase after stopping asthma biologics.

What does this article add to our knowledge? This observational, controlled, and pragmatic analysis of US insurance claims data suggests that people who stop asthma biologics have a similar risk for increased asthma exacerbations as those who continue asthma biologics.

How does this study impact current management guidelines? Current asthma guidelines are silent regarding whether, when, or how to stop asthma biologics. Data from this study suggest that stopping asthma biologics may not be associated with an increased risk for asthma exacerbation for many people.

Hormone Replacement Therapy and Risk of Severe Asthma Exacerbation in Perimenopausal and Postmenopausal Women: 17-Year National Cohort Study
Nwaru et al 2751

What is already known about the topic? Evidence on the impact of use of hormonal replacement therapy (HRT) on clinical outcomes of asthma in perimenopausal and postmenopausal women with asthma is lacking.

What does this article add to our knowledge? Use of HRT in the long term may increase the risk of severe asthma exacerbation in perimenopausal and postmenopausal women.

How does this study impact current management guidelines? Although current findings do not suggest changes in management of asthma in perimenopausal and postmenopausal women, studies uncovering the mechanisms through which HRT impact on clinical outcomes of asthma are required.
Performance of Eosinophil Cationic Protein as a Biomarker in Asthmatic Children
Shah et al 2761

What is already known about this topic? Blood eosinophils are a frequently used marker of type 2 inflammation in children with asthma, but their sensitivity for predicting outcomes is relatively poor. Alternative markers of type 2 inflammation may be beneficial in children.

What does this article add to our knowledge? Plasma eosinophil cationic protein (ECP) concentrations were associated with type 2 inflammatory markers, poorer asthma control and lung function, and historical exacerbations. Higher plasma ECP also predicted systemic corticosteroid responsiveness and future exacerbations at 12 months.

How does this study impact current management guidelines? Plasma ECP may be a useful marker of type 2 inflammation and may help identify those children at highest risk for recurrent exacerbations who could benefit from corticosteroid treatment.

Treatable Traits in Elderly Asthmatics from the Australasian Severe Asthma Network: A Prospective Cohort Study
Wu et al 2770

What is already known about this topic? The treatable traits (TTs) approach has been increasingly recommended and applied effectively in patients with severe asthma. However, data on the prevalence of TTs in different subgroups of patients with asthma are limited, especially for elderly individuals.

What does this article add to our knowledge? TTs can be systematically assessed in elderly patients with asthma. Some TTs were found to be strongly associated with future exacerbations, demonstrating their crucial clinical utility. A prediction model based on TTs can be used to predict exacerbation risk in people with asthma.

How does this study impact current management guidelines? Assessing TTs in elderly patients with asthma is of great necessity, and future exacerbation can be predicted by identifying risk factors of TTs, thus allowing targeted intervention for its prevention.

Association Between Statin Medication and Asthma/Asthma Exacerbation in a National Health Screening Cohort
Kim et al 2783

What is already known about this topic? Statins have anti-inflammatory and immunomodulatory properties and might be beneficial for asthma treatments. Despite positive preclinical data on statin use in patients with asthma, clinical trials and epidemiological studies have yielded conflicting results.

What does this article add to our knowledge? Using a nationwide and population-based cohort, this study strengthens epidemiological evidence supporting the association of statin use with reduced exacerbations in patients with asthma. However, no association between previous statin use and the asthma diagnosis was observed.

How does this study impact current management guidelines? Statins may prevent asthma exacerbation; nonetheless, a long-term prospective clinical trial is needed.

Novel Treatment-Refractory Preschool Wheeze Phenotypes Identified by Cluster Analysis of Lung Lavage Constituents
Teague et al 2792

What is already known about this topic? Corticosteroid-refractory recurrent wheeze in preschool children is a challenging dilemma for practicing clinicians, but guidelines to direct alternate treatments for this population are not clear.

What does this article add to our knowledge? We applied unsupervised analysis of variables obtained from bronchoscopy and bronchoalveolar lavage to identify 4 clusters of preschool children with inhaled corticosteroid—refractory wheeze: (1) airway malacia, (2) gastroesophageal reflux disease/aspiration, (3) indolent human rhinovirus bronchoalveolitis, and (4) type-2^high^ inflammation.

How does the study impact current management guidelines? Bronchoscopy with bronchoalveolar lavage is a safe and useful procedure to diagnose unforeseen structural, inflammatory, and pathogen-related informants of inhaled corticosteroid—refractory wheeze in preschool children. The results support the development and testing of novel treatments targeting airway malacia, human rhinovirus infection, and bronchoalveolar lavage neutrophilia.
Predictors of Asthma Control and Exacerbations: A Real-World Study

Racine et al

What is already known about this topic? Achieving optimal asthma control and minimizing the risk of exacerbation are the main goals in the treatment of asthma. Predictors of asthma control and exacerbations have been mainly assessed in distinct populations.

What does this article add to our knowledge? When assessed in the very same population, predictors of asthma control differ from those of asthma exacerbations. Psychological distress and smoking have a negative impact on asthma control, whereas asthma exacerbations are related to the severity of the disease.

How does this article impact current management guidelines? Modifiable individual factors would benefit from being addressed in tailored behavioral interventions to obtain an optimal asthma control, whereas an optimal management of asthma early after its onset is likely to decrease the occurrence of asthma exacerbations.

Total IgE Variability Is Associated with Future Asthma Exacerbations: A 1-Year Prospective Cohort Study

Yuan et al

What is already known about this topic? IgE has a critical role in the pathophysiology of both allergic and nonallergic asthma. However, data on the relationship between IgE variability and asthma exacerbations are limited.

What does this article add to our knowledge? IgE variability can be determined using the IgE coefficient of variation. Patients with asthma with higher IgE variability have an increased risk for future asthma exacerbations, which demonstrates the practical clinical utility of IgE variability.

How does this study impact current management guidelines? Variability in total serum IgE levels is an easily obtained and practical measure for predicting asthma exacerbations that may be helpful for physicians to identify patients with asthma who are at risk.

Fruit-Induced Anaphylaxis: Clinical Presentation and Management

Gabrielli et al

What is already known about this topic? Fruit-induced anaphylaxis can occur with fruit, independent of pollen allergy, or as pollen–food syndrome. Although pollen–food syndrome is usually limited to the oral mucosa, it can progress to anaphylaxis in about 10% of patients.

What does this article add to our knowledge? Fruit-induced anaphylaxis affects a substantial percentage of anaphylaxis patients. Epinephrine use, especially in the pre-hospital setting, remained low. More severe anaphylactic reactions were more likely to occur in the spring, indicating possible cross-reactivity to pollens.

How does this study impact current management guidelines? Epinephrine treatment of fruit-induced anaphylaxis should be administered by a caretaker or physician regardless of the culprit fruit or the presence of atopy. An epinephrine autoinjector should be prescribed among all patients with fruit-induced allergy.

Trends in Emergency Department Visits and Hospitalizations for Acute Allergic Reactions and Anaphylaxis Among US Older Adults: 2006-2014

Arroyo et al

What is already known about this topic? Little is known about national health care use patterns for acute allergic reactions, including anaphylaxis, in the US older adult population (age ≥65 years).

What does this article add to our knowledge? Older adults had a higher anaphylaxis-related hospitalization rate compared with younger adults. Anaphylaxis-related ED visits and hospitalizations, especially drug-related, have increased over time. Risk factors for anaphylaxis-related death included older age, especially 85 years of age and older, and drug-related trigger.

How does this study impact current management guidelines? Anaphylaxis, especially drug-related anaphylaxis, is a growing risk for the US older adult population. It may be important to establish age-appropriate clinical guidelines for anaphylaxis in this vulnerable population with unique exposures and comorbidities.
Wheat Anaphylaxis in Adults Differs from Reactions to Other Types of Food
Kraft et al 2844

What is already known about this topic? Wheat anaphylaxis among adults depends, in the majority of cases, on the presence of a cofactor (usually exercise), which often leads to a delayed-onset reaction. Therefore, wheat allergy is a diagnostic challenge.

What does this article add to our knowledge? Our analysis demonstrates that reactions caused by wheat are more common in Central than Southern Europe, occur frequently in patients with no atopic background, and present with severe cardiovascular symptoms.

How does this study impact on current management guidelines? Wheat-dependent exercise-induced anaphylaxis is a common form of anaphylaxis. Wheat can cause atypical but severe anaphylactic reactions. Thus, patients presenting with recurrent urticaria or idiopathic anaphylaxis should be evaluated to exclude wheat allergy.

Prevalence and Trend of Allergen Sensitization in Adults and Children with Atopic Dermatitis Referred for Patch Testing, North American Contact Dermatitis Group Data, 2001-2016
Silverberg et al 2853

What is already known about this topic? Atopic dermatitis (AD) is a heterogeneous disorder with increased predisposition for allergic and irritant contact dermatitis.

What does this article add to our knowledge? Patients with AD who were referred for patch testing had a high proportion of positive patch tests, with similar proportions as patients without AD. Patients with AD had a distinct profile of currently relevant allergens.

How does this study impact current management guidelines? Patch testing is a clinically relevant and useful assessment in children and adults with AD.

African American Children Are More Likely to Be Allergic to Shellfish and Finfish: Findings from FORWARD, a Multisite Cohort Study
Mahdavinia et al 2867

What is already known about this topic? Previous studies have shown that food allergy, food sensitization, and dietary differences of children with diverse racial background and phenotype are often associated with other common allergic conditions such as atopic dermatitis, asthma, and allergic rhinitis.

What does this article add to our knowledge? Higher prevalence of asthma and allergy to shellfish observed among African American (AA) children increases the risk of severe potentially fatal reactions.

How does this study impact current management guidelines? Understanding the varied risk of allergy to different food allergens in AA children compared with whites will guide our clinical practice in terms of history taking and additional testing.

The Cost-Effectiveness of Preschool Peanut Oral Immunotherapy in the Real-World Setting
Shaker et al 2876

What is known about this subject? POIT may be cost effective in contexts in which therapy cost is low and response rate is high; however, health and economic outcomes of real world POIT have not been evaluated in real-world, geographically diverse economies.

What does this article add to our knowledge? Compared with no therapy, starting preschool-aged children on POIT is associated with superior health and economic outcomes in both the United States and Canada, with cost savings reaching $12.3 to $47 billion in the United States and $10.4 to $13.6 billion in Canada.

How does this study impact current management guidelines? Preschool POIT is safe, effective, and implementable in real-world settings, associated with significant cost savings and quality-adjusted life-year gains versus peanut avoidance, showing it to be a feasible option to consider for interested families.
Immune Dysregulation in Human ITCH Deficiency Successfully Treated with Hematopoietic Cell Transplantation
Patel et al

What is already known about this topic? Human ITCH deficiency results in systemic autoimmunity and immunodeficiency. The clinical phenotype has previously been described, but the immunophenotype has been poorly characterized and no definitive therapy has been reported for this devastating condition.

What does this article add to our knowledge? This article expands understanding about the clinical phenotype (including colitis, arthritis, and uveitis) and immunophenotype (both lymphoid and myeloid alterations) of human ITCH deficiency. We report the first successful hematopoietic cell transplantation for management of this condition.

How does this study impact current management guidelines? Clinicians caring for patients with ITCH deficiency may consider hematopoietic cell transplantation for management of multisystem immune dysregulation.