Asthma and COVID-19

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Childhood Asthma Leadership Coalition

CONTENTS

JOURNAL articles

M.S. Shaker, et al., COVID-19: Pandemic Contingency Planning for the Allergy and Immunology Clinic, (2020) *Journal of Allergy and Clinical Immunology Practice*, pii: S2213-2198(20)30253-1, doi: 10.1016/j.jaip.2020.03.012.

In the event of a global infectious pandemic, drastic measures may be needed that limit or require adjustment of ambulatory allergy services. However, no rationale for how to prioritize service shut down and patient care exists. **A consensus-based ad-hoc expert panel of allergy/immunology specialists from the United States and Canada developed a service and patient prioritization schematic to temporarily triage allergy/immunology services.** Recommendations and feedback were developed iteratively, using an adapted modified Delphi methodology to achieve consensus. During the ongoing pandemic while social distancing is being encouraged, most allergy/immunology care could be postponed/delayed or handled through virtual care. **With the exception of many patients with primary immunodeficiency, patients on venom immunotherapy, and patients with asthma of a certain severity, there is limited need for face-to-face visits under such conditions**. These suggestions are intended to help provide a logical approach to quickly adjust service to mitigate risk to both medical staff and patients. Importantly, individual community circumstances may be unique and require

contextual consideration. The decision to enact any of these measures rests with the judgment of each clinician and individual health care system. Pandemics are unanticipated, and enforced social distancing/quarantining is highly unusual. This expert panel consensus document offers a prioritization rational to help guide decision making when such situations arise and an allergist/immunologist is forced to reduce services or makes the decision on his or her own to do so.

J.J. Zhang, et al. Clinical Characteristics of 140 Patients Infected with SARS-CoV-2 in Wuhan, China, (2020) *Allergy*, doi: 10.1111/all.14238.

BACKGROUND: Coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection has been widely spread. We aim to investigate the clinical characteristic and allergy status of patients infected with SARS-CoV-2. METHODS: Electronic medical records including demographics, clinical manifestation, comorbidities, laboratory data, and radiological materials of 140 hospitalized COVID-19 patients, with confirmed result of SARS-CoV-2 viral infection, were extracted and analyzed. RESULTS: An approximately 1:1 ratio of male (50.7%) and female COVID-19 patients was found, with an overall median age of 57.0 years. All patients were community-acquired cases. Fever (91.7%), cough (75.0%), fatigue (75.0%), and gastrointestinal symptoms (39.6%) were the most common clinical manifestations, whereas hypertension (30.0%) and diabetes mellitus (12.1%) were the most common comorbidities. Drug hypersensitivity (11.4%) and urticaria (1.4%) were self-reported by several patients. **Asthma or other allergic diseases were not reported by any of the patients. Chronic obstructive pulmonary disease (COPD, 1.4%) patients and current smokers (1.4%) were rare**. Bilateral ground-glass or patchy opacity (89.6%) was the most common sign of radiological finding. Lymphopenia (75.4%) and eosinopenia (52.9%) were observed in most patients. Blood eosinophil counts correlate positively with lymphocyte counts in severe ($r = .486$, $P < .001$) and nonsevere ($r = .469$, $P < .001$) patients after hospital admission. Significantly higher levels of D-dimer, C-reactive protein, and procalcitonin were associated with severe patients compared to nonsevere patients (all $P < .001$). CONCLUSION: Detailed clinical investigation of 140 hospitalized COVID-19 cases suggests eosinopenia together with lymphopenia may be a potential indicator for diagnosis. **Allergic diseases, asthma, and COPD are not risk factors for SARS-CoV-2 infection.** Older age, high number of comorbidities, and more prominent laboratory abnormalities were associated with severe patients.

T. Lupia, et al., 2019 Novel Coronavirus (2019-nCoV) Outbreak: A New Challenge, (2020) *Journal of Global Antimicrobial Resistance*, 21: 22-27, doi: 10.1016/j.jgar.2020.02.21

OBJECTIVES: Following the public-health emergency of international concern (PHEIC) declared by the World Health Organization (WHO) on 30 January 2020 and the recent outbreak caused by 2019 novel coronavirus (2019-nCoV) [officially renamed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)] in China and 29 other countries, we aimed to summarise the clinical aspects of the novelBetacoronavirus disease (COVID-19) and its possible clinical presentations together with suggested therapeutic algorithms for patients who may require antimicrobial treatment. METHODS: The currently available literature was reviewed for microbiologically confirmed infections by 2019-nCoV or COVID-19 at the time of writing (13

February 2020). A literature search was performed using the PubMed database and Cochrane Library. Search terms included 'novel coronavirus' or '2019-nCoV' or 'COVID-19'. RESULTS: Published cases occurred mostly in males (age range, 8-92 years**). Cardiovascular, digestive and endocrine system diseases were commonly reported, except previous chronic pulmonary diseases [e.g. chronic obstructive pulmonary disease (COPD), asthma, bronchiectasis] that were surprisingly underreported.** Fever was present in all of the case series available, flanked by cough, dyspnoea, myalgia and fatigue. Multiple bilateral lobular and subsegmental areas of consolidation or bilateral ground-glass opacities were the main reported radiological features of 2019-nCoV infection, at least in the early phases of the disease. CONCLUSION: The new 2019-nCoV epidemic is mainly associated with respiratory disease and few extrapulmonary signs. However, there is a low rate of associated pre-existing respiratory co-morbidities.

Z. Wu and J.M. McGoogan, Characteristics of and Important Lessons from the Coronavirus Disease 2019 (COVID-19) Outbreak in China, (2020) *JAMA*, 323(13): 1239-1242, doi:10.1001/jama.2020.2648

The Chinese Center for Disease Control and Prevention recently published the largest case series to date of coronavirus disease 2019 (COVID-19) in mainland China (72 314 cases, updated through February 11, 2020). This Viewpoint summarizes key findings from this report and discusses emerging understanding of and lessons from the COVID-19 epidemic.

I. Satia, et al., Prevalence and contribution of respiratory viruses in the community to rates of emergency department visits and hospitalizations with respiratory tract infections, chronic obstructive pulmonary disease and asthma, (2020) *PLoS One*, 15(2): e0228544, doi: 10.1371/journal.pone.0228544

BACKGROUND: The individual and combined contribution of viral prevalence in the community to Emergency Department (ED) visits and hospitalizations with respiratory tract infections (RTIs), chronic obstructive pulmonary disease (COPD) and asthma is unclear. METHODS: A retrospective analysis on daily viral positive tests and daily ED visits and hospitalizations between 01/01/2003 to 31/12/2013 in Ontario, Canada. Viral data was collected from the Centre for Immunization and Respiratory Infectious Diseases (CIRID). The Canadian Institute for Health Information reports daily ED visits and hospitalizations for RTIs, COPD and asthma as a primary diagnosis. RESULTS: There were 4,365,578 ED visits with RTIs of which 321,719 (7.4%) were admitted to hospital; 817,141 ED visits for COPD of which 260,665 (31.9%) were admitted and 649,666 ED visits with asthma of which 68,626 (10.6%) were admitted. **The percentage of positive tests to influenza A and B, respiratory syncytial virus (RSV), parainfluenza and adenovirus prevalence explained** 57.4% of ED visits and 63.8% of hospitalizations for RTI, 41.4% of ED visits and 39.2% of hospitalizations with COPD but only 1.5% of ED visits and **2.7% of hospitalizations for asthma**. The further addition of human metapneumovirus, rhinovirus and coronavirus over the final 3 years accounted for 66.7% of ED visits and 74.4% of hospitalizations for RTI, 52.5% of visits and 48.2% of hospitalizations for COPD, and only 13.3% of visits and 10.4% of hospitalizations for asthma. CONCLUSIONS:

Community respiratory viral epidemics are major drivers of ED visits and hospitalizations with RTIs and COPD but only a modest contributor to asthma.

In the NEWS

Editor's Note: A search of recent news related to childhood asthma and COVID-19 returned hundreds of articles. Those included here are intended to reflect the broad opinions, knowledge, and stories reflected in the fuller media landscape of this issue but may not reflect all reporting.

Wendy Ruderman, Philadelphia's most vulnerable children suffer fallout from COVID-19 crisis, *The Philadelphia Inquirer,* April 6 2020.

Kristina Marusic, Kids with asthma who live near heavy air pollution face greater risk from coronavirus, *Environmental Health News,* April 3 2020.

Sara Kayat, Doctor's Note: How to manage your asthma during coronavirus, *Al Jazeera English,* April 2 2020.

Carolyn Wickware and Julia Robinson, Asthma inhaler stocks low after COVID-19 linked demand spike, government says, *The Pharmaceutical Journal,* April 2 2020.

Knvul Sheikh, Essential Drug Supplies for Virus Patients Are Running Low, *The New York Times,* April 2 2020.

Mike Stunston, Is coronavirus more dangerous for people with asthma? Here's what health experts say., *The Philadelphia Inquirer,* March 19 2020.

Hillery Stone, A Virus Put My Asthmatic Son in the I.C.U. What Could Coronavirus Do?, *The New York Times,* March 17 2020.

Melissa Godin, Are People With Asthma at High Risk for Coronavirus?, *TIME,* March 16 2020.

Sonja Sharp, As coronavirus outbreak accelerates, youthful faces may mask mortal risk, *The Los Angeles Times,* March 11 2020.