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Title: COVID-19 Prognosis in Children with Asthma

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Letter to editor

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a new coronavirus pandemic disease with extremely spreadable that affects all ages of children. Incubation period of the COVID-19 is in the range of 2–14 days. Diagnosis of COVID-19 is nasal and pharyngeal swab, sputum, stool, and blood samples for COVID-19 nucleic acid using reverse-transcriptase polymerase chain reaction (RT-PCR). Nasal swab is more sensitive and specific than a pharyngeal swab. Lung CT imaging is a confirmation complimentary method which is more sensitive than RT-PCR analysis. The mortality rate is very low in children due to COVID-19 infection. Treatment of COVID-19 basically is supportive care and home isolation considered for a 2 weeks (1). Most countries are infected. Clinical manifestations of COVID-19 are varying from asymptomatic to severe in children (2). Allergic disorders are frequent that have been increasing in the world for decades. Asthma is the most common non communicable disease in children (3). Asthma treatments could be continuing during COVID-19 infection but biological drugs should be stopped during the acute phase of COVID-19 infection (4-6). Asthmatic Patients particularly severe or uncontrolled asthma are at increased risk of producing severe COVID-19(7,8).

Allergy or asthma is not a risk factor for more developing of COVID-19 in this population. COVID-19 infection is lower and has a less severe course in children (8). Uncontrolled asthma and immunodeficiency is a risk factor for COVID-19 infection; therefore, appropriate medications are recommended for good control asthma (8,9). Oral steroids should be continue in the management of asthma when the patient is already taking these medications and in acute asthma attack due to COVID-19 based on The Global Initiative for Asthma (GINA) and the British Thoracic Society (BTS) guidelines (10, 11). In some countries, for patients with severe asthma, shielding and protection such as home isolation for up to 12 weeks is recommended (12). Allergy treatments including antihistamines, corticosteroids, and bronchodilators are not increase susceptibility or the severity of COVID-19 disease (8,13). Patients with allergic asthma, allergic rhinitis, or other allergy conditions should be treatment according to guidelines (8,13,14). Biologics drugs withhold during acute COVID19 infection (13).The GINA recommends avoiding the use of nebulizers for asthma attacks due to the increased risk of disseminating COVID-19 to other personnel; therefore, pressurized metered-dose inhaler (pMDI) via a spacer is the preferred treatment during asthma attacks (9). Atopic dermatitis or active skin lesions has not been associated with a higher risk of SARS-CoV-2 infection. Patients with severe or uncontrolled asthma are at increased risk of developing more severe COVID-19 but not preexisting allergies disorders (4). Incidence, clinical features, laboratory, disease course and immunological findings were no difference between allergic and non-allergic children with COVID-19 infection (14). A recent study from the USA suggests that asthma disease is much more common in children and adults with COVID-19 than it was already reported in China and Europe (15).

Association between allergic disease and severe clinical outcomes of COVID-19 remains unclear. The best option to prevent COVID-19 is social distancing of families with asthmatic children (16).

COVID-19 is not associated with severe asthma exacerbations and uncontrolled asthma, developing more severe COVID-19(17). Unlike previous studies, Lommatzsch et al believed that allergic asthma might have a lower risk to develop severe of COVID-19 and Omalizumab(anti-IgE antibody) shown to enhance anti-viral immunity (18). There is no relation between asthma, asthma medication, or asthma severity and the clinical outcomes of COVID-19(19). Castro-Rodriguez et al reported that asthma is a potential risk factor for COVID-19 severity but not mortality- in children (20).

Keywords: COVID-19, Children, Asthma, Prognosis

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