

## **Position of the Asthma and Allergy Working Group (G2A) of the SPLF on the management of asthma patients during the COVID-19 epidemic**

Patients with asthma, and in particular with severe asthma, are a population at increased risk of severe viral respiratory infections that can induce asthma exacerbations. Most asthma exacerbations are indeed related to viral infections apart from situations in which no anti-inflammatory treatment is used.

The potential role of Th2 inflammation in reducing the anti-viral defense capacity of the bronchial epithelium has been suggested to explain this susceptibility. Inhaled corticosteroids or biotherapies allow reducing viral exacerbations by reducing Th2 inflammation and possibly by inhibiting viral replication. It is the same with the use of azithromycin in severe asthma.

In the current COVID-19 epidemic, asthma patients do not appear to be overrepresented, based on the preliminary data available. Nevertheless, there is no specific data on asthma exacerbations, and a fortiori serious exacerbations, directly related to this infection. Theoretically, it cannot be ruled out that COVID-19 infection may be responsible for an asthma exacerbation.

### **Proposal 1. Background treatment**

All background treatments of asthma should be continued during the period of the epidemic and adjusted so that asthma is perfectly controlled (to be evaluated based on a standard symptom score such as the ACT, ACQ, etc.). In particular, background treatment with inhaled corticosteroids, possibly combined with other molecules (LABA, LAMA, montelukast, etc.) should be continued during the period of the epidemic. Inhaled corticosteroids do not expose to a risk of more severe viral respiratory infection nor to an increased risk of SARS-CoV-2 infection based on the data available.

Similarly, marketed biotherapies (omalizumab, mepolizumab, benralizumab) and biotherapies with a temporary authorization for use (dupilumab) should be continued while maintaining the prescribed frequency of injections. Indeed, biotherapies prescribed in asthma are not immunosuppressive. These drugs may be administered by self-injection at home, if the patients have been trained by a nursing staff, to avoid travels to healthcare facilities.

Long-term oral corticosteroids should, as usual, be maintained at the lowest effective dose to control asthma and should be continued when needed to maintain a proper control of asthma.

### **Proposal 2. Initiation of biotherapies**

In patients with poorly controlled asthma, there is no reason to delay biotherapy initiation if indicated. It is recommended not to start biotherapy as usual during an exacerbation to avoid influencing the parameters for treatment evaluation.

### **Proposal 3. Treatment of exacerbations**

Asthma exacerbations are treated with systemic corticosteroids. A delayed initiation may have serious consequences. In case of exacerbation of febrile asthma, even with suspected COVID-19 infection, the administration of systemic corticosteroids (0.5-1 mg/kg) associated with short-acting bronchodilators should not be delayed. Corticosteroids are not nonsteroidal anti-inflammatory drugs (NSAIDs) that are associated with more serious forms of COVID-19 infection.

The use of nebulizations may increase the spread of the virus in aerosols and requires precautions for caregivers (goggles, FFP2 mask, overcoat) but also for patient relatives. The use of nebulizations at home, in a patient with suspected or confirmed COVID-19 infection, should therefore be limited to a minimum. If the clinical situation allows it, the use of an inhalation chamber should be preferred.

If COVID-19 infection is confirmed, the usual treatment duration (5 days) should be maintained.

#### **Proposal 4. Prevention**

Barrier measures and confinement should be applied according to the current recommendations. In patients at risk of occupational exposure to COVID-19 (caregivers, teachers, etc.), a reorganization workstation should be discussed with the employer and the occupational physician according to asthma severity and control as well as whether or not long-term oral corticosteroids are taken.

**Overall, asthma medication should be continued at an effective dose so that asthma, regardless of its severity, is controlled during the COVID-19 epidemic.**

#### **References**

1. Wollenberg A, Wetzel S, Burgdorf WH, Haas J. Viral infections in atopic dermatitis: pathogenic aspects and clinical management. *J Allergy Clin Immunol* 2003; 112:667-74.
2. Contoli M, Ito K, Padovani A, Poletti D, Marku B, Edwards MR, et al. Th2 cytokines impair innate immune responses to rhinovirus in respiratory epithelial cells. *Allergy* 2015; 70:910-20.
3. Portales-Cervantes L, Crump OM, Dada S, Liwski CR, Gotovina J, Haidl ID, Marshall JS. IL-4 Enhances Interferon Production by Virus-Infected Human Mast Cells. *J Allergy Clin Immunol*. 2020 Feb 26.
4. Zhang JJ, Dong X, Cao YY, Yuan YD, Yang YB, Yan YQ, Akdis CA, Gao YD. Clinical characteristics of 140 patients infected with SARS-CoV-2 in Wuhan, China. *Allergy*. 2020 Feb 19. doi: 10.1111/all.14238.
5. Lupia T, Scabini S, Pinna SM, Di Perri G, De Rosa FG, Corcione S. 2019-novel coronavirus outbreak: A new challenge. *J Glob Antimicrob Resist*. 2020 Mar 7. pii: S2213-7165(20)30050-3. doi: 10.1016/j.jgar.2020.02.021.
6. Holguin F, Cardet JC, Chung KF, et al. Management of severe asthma: a European Respiratory Society/American Thoracic Society guideline. *Eur Respir J*. 2020;55(1):1900588. Published 2020 Jan 2. doi:10.1183/13993003.00588-2019