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Pills to think about in allergic rhinitis children during COVID-19 era

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Allergic rhinitis (AR) is a common pediatric disease, that involves up to the 25% of children worldwide. Environmental pollution, passive smoke, and many viruses are actively involved in the chronic inflammation of the nasal mucosa.

As described previously in the literature, novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection in children is uncommon and often asymptomatic or mild[1].

So far, we do not have data demonstrating a higher risk in the development of Coronavirus disease-19 (COVID-19) in allergic children, except for those with uncontrolled symptoms.[1] Moreover, high levels of allergic sensitization are associated with a reduction of ACE-2 expression, the entrance door for SARS-CoV-2 in lung and intestinal mucosa cells. This could decrease the susceptibility to the infection in allergic subjects.[2]

Initial symptoms of COVID-19 may be cough, sore throat, accompanied by fever, fatigue and muscle ache, while nausea or vomiting and diarrhea are infrequent symptoms at onset. Anosmia could be another early symptom [3], difficult to detect in children especially in those with AR who already have edema and inflammation of nasal mucosa.

Olfactory dysfunction can be caused by many viruses that create a local inflammatory reaction with a subsequent development of rhinorrhea; instead olfactory dysfunction in COVID-19 seems to be different as it is not associated with rhinorrhea.[3] In the next few months, pediatricians should investigate carefully olfactory dysfunctions, such as anosmia, to distinguish the allergic or infective etiopathogenesis. This could help to detect affected children even with mild symptoms and limit SARS-CoV2 transmission.

Another point to consider is to monitor AR symptoms because they can hide an overlap with COVID-19, delaying the proper diagnosis. [1] This could be true mostly in children sensitized to dust mite, that during home quarantine can be persistently exposed to this allergen in the domestic environment.

How to manage therapy in AR children affected by COVID-19?

Intra-nasal corticosteroid can be continued at the recommended dose because, so far, the suppression of the immune system has not been proven. Keeping on local therapy could help to reduce allergic symptoms such as sneezing and avoid the spread of SARS-COV-2.[4]

Considering allergen immunotherapy (AIT), it decreases Th2 response in the Th1/Th2 balance, inducing an allergen- specific immune tolerance. Even if we do not have demonstrations of a switch between Th1/Th2 cells in COVID -19, there are developing data that disease severity is linked to a systemic Th1 response that generate an inflammasome activation and a cytokine storm. For this reason, it is recommended to interrupt AIT in confirmed COVID-19 cases. Instead it can be continued, as usual, in allergic children without clinical symptoms of COVID-19 and without a history of exposure to confirmed cases within the previous 14 days. [5]

All these suggestions are useful so far, but need to be reevaluated in the next future, according to newly available data.

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