

Diagnosis of COVID-19 infection in children: Less nasopharyngeal swabs, more saliva

Dear Editor,

We read with great interest the article by Jonas F. Ludvigsson on COVID-19 infection in Children.¹ He conducted a systematic literature review to identify papers on COVID-19. The conclusion was that COVID-19 infection can occur in children, but they seemed to have a lower incidence as well as a milder disease course and better prognosis than adults.

The pandemic by the novel COVID-19 (SARS-CoV-2), started in December 2019 in Wuhan, China, is rapidly affecting multiple countries around the world. Data from the outbreak in China, from December 2019 to 11 February 2020, report a total of 44.672 confirmed cases with only 965 childhood (2.16%).² Recent data reported by the Italian National Health System indicate a number of 4.380 children, aged 0-18, among the 218.997 confirmed cases of COVID-19 as of 12 May 2020 (2%). At present, we do not know the reasons for this low incidence and many hypotheses speculate on this low susceptibility. Some theories include children vaccines cross-reactivity against SARS-CoV-2, the distribution and functioning of viral receptors on respiratory mucosae, and protective role of the thymus function.³

To date, none of these theories fully explain the low incidence of COVID-19 infection in children. Upper respiratory tract nasopharyngeal swabs are widely used as nucleic acid detection samples to diagnose COVID-19 infection. The low positive rate of nasopharyngeal swabs and the difficulty to perform properly this procedure in children can contribute to explaining the low incidence of COVID-19 infection in this age group. Correctly performing a nasopharyngeal swab in children is very stressful and painful due to their poor cooperation.

Nasopharyngeal and throat swabs are usually obtained for viral load monitoring of respiratory infections, but gathering these specimens causes severe discomfort in children and requires close contact between healthcare workers and patients thus exposing health workers to the risk of contagion. Saliva, generated from salivary glands in the oral cavity, has been reported SARS-CoV-2 nucleic acid positive, so it represents a reliable tool to detect SARS-CoV-2 infection.^{4,5} Besides, saliva also contains secretions produced by the mucosa of the nasopharynx either coming up from the lungs.


Recently, it has been reported that the positive rate of SARS-CoV-2 nucleic acid test carried out in saliva samples in adults with confirmed COVID-19 infection is higher than in nasopharyngeal swabs and faeces (38.13% and 9.83%, respectively).⁵

The easy detection of saliva samples, associated with its quickness and non-invasiveness, can improve the accuracy of the diagnosis of COVID-19 infection in children, reducing at the same time the discomfort for these patients and the risks of contagion for healthcare workers.

Therefore, we think that saliva can be an ideal specimen type for the diagnosis of COVID-19 infection in children and its use should be implemented to enhance the chances of diagnosing.

CONFLICT OF INTEREST

None.

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