

Diagnosis of COVID-19 in children guided by lack of fever and exposure to SARS-CoV-2: Clinical Research Article *Pediatr Res* (2021)

Background : It is presently the norm to routinely test patients for SARS-CoV-2 infection at the time of admission. This overburdens healthcare facilities and poses a logistic challenge. Is it necessary to test children or can symptoms and exposure accurately predict the risk of COVID infection?

Objective: The objective of this study was to test how certain signs and symptoms related to COVID-19 in children predict the positivity or negativity of the SARS-CoV-2 nasopharyngeal swab in children.

Method: For the purposes of this study, the cases of 2940 children who underwent RT-PCR assay for Sars-CoV-2 in nasal or nasopharyngeal swabs, admitted to the Emergency Department (ED) of the Bambino Gesù Children's Hospital in Rome, Italy, between the 9th of September 2020 and the 31st of October 2020, were reviewed. In the study period, ED flows were organized to separate children with fever and respiratory symptoms from other patients and infection prevention and control measures were enforced. All patients and one parent were actively screened when entering the hospital using a structured way checking for fever, respiratory symptoms, and possible contacts with COVID-19 cases. A total of 2940 subjects were tested during the selected time frame. **2699 of these were tested for a clinical suspicion of infection, and 241 were tested as a safety procedure before being admitted to hospital for other reasons.** The samples were allocated to group A(suspected) and B, respectively.

ACADEMIC P.E.A.R.L.S

Pediatric Evidence And Research Learning Snippet



Should we routinely test all children for SARS-CoV-2 infection at the time of admission in ER?

Especially in those places, where positivity rate is low

Results: In group A, 2596 tested negative (96.2%), and 103 tested positive (3.8%). The median age was slightly higher in the subgroups of those who tested positive (7.0 vs 5.3 years). In group B, 238 subjects tested negative (98.3%), and 4 tested positive (1.7%). When adjusting for age groups, no significant differences were found between positive and negative subjects for fever and respiratory symptoms. The difference in exposure to SARS-CoV-2 was significant in all subgroups. Headache was also significantly more reported by children aged 10 years or more, namely seven out of the nine children in the positive group who complained of this symptom.

Conclusion: Despite the low prevalence of the disease in the pediatric age, older children usually develop a clinically apparent form of COVID19, characterized by unspecific symptoms, such as headache. It is understandable that all URI can presently be labelled COVID till proved otherwise. **But this study implies that a history of exposure to SARS-CoV-2 is the most predictive index of current infection, and that a child without fever or contact with infected subjects, even when presenting with mild respiratory symptoms, in most cases will prove negative to SARS-CoV-2 testing.**

Message: A major upturn of this "diagnostic razor" is that all GPs/ Pediatricians may treat a simple cough, a sore throat or any isolated respiratory symptom, avoiding unnecessary referral to the laboratories or hospitals, where diagnostic testing takes place.

EXPERT COMMENT

"Headache is a common symptom in older children who are COVID positive. Routine testing before every hospital admissions from emergency room for SARS-CoV-2 infection needs to be reviewed, if there is no fever or history of COVID exposure, especially in areas where positivity rate is low in general population."

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With warm regards,

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Reference

Roversi, M., Raucci, U., Pontrelli, G. *et al.* Diagnosis of COVID-19 in children guided by lack of fever and exposure to SARS-CoV-2. *Pediatr Res* (2021). <https://doi.org/10.1038/s41390-021-01585-5>.