

Should we test asymptomatic children for SARS-CoV-2?

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A commentary on

Lamberghini F, Trifan G, Testai F D.

Severe acute respiratory syndrome coronavirus 2 infection in asymptomatic paediatric dental patients. *J Am Dent Assoc* 2021; **152**: 277–283.

Abstract

Design Cross-sectional study.

Sample selection This study included 921 children (471 male, 450 female) due to receive either routine dental care involving aerosol generating procedures or comprehensive dental care under general anaesthetic. Data was collected at a paediatric dental clinic associated with the University of Illinois, Chicago. Patients were screened by a telephone questionnaire assessing for coronavirus disease 2019 (COVID-19) or severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection. Asymptomatic patients and those with no known disease exposure went on to receive a reverse transcription polymerase chain reaction (RT-PCR) test for SARS-CoV-2, the causative pathogen for COVID-19. Those displaying symptoms of COVID-19 or who had potentially been exposed to the virus or disease were not included in this study and were referred for onwards medical advice.

Data analysis Electronic dental records were accessed to retrieve patient demographics, insurance type, dental diagnosis and past medical history. The percentage of positive SARS-CoV-2 test results was calculated for each category. Positive and negative test results were compared appropriately for both categorical and continuous variables, with significance reached when $p < 0.05$. SPSS version 27 was used for statistical analysis.

Results This study found the positivity rate for SARS-CoV-2 to be 2.3% (21/921) in asymptomatic dental patients aged under 18 years. Age, insurance type, medical history and dental diagnosis were comparable in both positive and negative test result groups. The Hispanic/Latinx population had a higher percentage (3.1%) of positive tests than other groups. More male patients tested positive for SARS-CoV-2 (13 male, 8 female), but this was not statistically significant.

Conclusions RT-PCR testing identified children carrying SARS-CoV-2 who had been cleared to attend an appointment following a screening questionnaire.

Commentary

Evidence suggests COVID-19 symptoms in children are usually mild or asymptomatic,¹ and therefore, screening questionnaires alone may be unable to identify patients infected with SARS-CoV-2. Asymptomatic and mildly symptomatic SARS-CoV-2-positive patients are an important consideration for virus

Practice point

- Following screening questionnaires, RT-PCR testing detected SARS-CoV-2 in asymptomatic paediatric patients. Appropriate infection control measures remain necessary to reduce risk of COVID-19 spread.



transmission.² The dental profession must take appropriate measures to reduce the risk of disease spread during the COVID-19 pandemic.³

This novel cross-sectional study assesses the prevalence of SARS-CoV-2 in asymptomatic paediatric dental patients attending a clinic in Chicago using RT-PCR tests. There is little published evidence in this field. A recent study from Scotland assessed test results from asymptomatic dental patients but this included patients >5 years old and did not solely focus on the paediatric population.⁴

Selecting patients due to receive routine treatment involving an aerosol generating procedure or comprehensive treatment under general anaesthetic is highly relevant due to the potential for SARS-CoV-2 transmission. No symptomatic patients were included, although it may have been valuable to know how many patients were excluded following the screening questionnaire.

The authors discuss the limitations of the study, including the findings not being generalisable to the national population. Further studies with larger sample sizes matching the census would be beneficial. It was suggested that salivary tests may be better tolerated, but it is not stated whether any patients were pre-cooperative or unwilling to have the nasopharyngeal swabs taken. It may have been useful to report if all tests processed by the laboratory produced a valid result. Also, while the RT-PCR test has a high specificity for detecting SARS-CoV-2, the possibility of false-negative results cannot be ruled out.⁵

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GRADE rating



A higher number of male than female patients had a positive test result, which the authors acknowledged was not statistically significant. An exploratory analysis pooling their findings with two other studies^{6,7} testing children in healthcare settings suggested male patients had a 1.97% increased risk (95% CI 1.08–3.62) of being positive for SARS-CoV-2 compared to female patients. However, the data used from both additional studies appears to include patients who displayed symptoms before receiving an RT-PCR test.

Population-based measures to control the spread of COVID-19 differ between countries. This study discusses costs, availability of laboratories and patient tolerance as factors to be considered for introducing SARS-CoV-2 testing to dental settings. It is unknown whether positive test results were clustered at a specific time or if they were spread across the timeframe. Information was not provided on whether patients with positive test results were known to each other or from neighbourhoods with high levels of COVID-19.

In summary, the authors have provided insight into a strategy for identifying asymptomatic paediatric dental patients carrying SARS-CoV-2. More research is required to allow these findings to be generalised to different populations before being implemented on a wider scale. Although this study raises several questions, it is important to acknowledge that such research is often conducted

rapidly to provide new evidence which may help protect healthcare workers and patients.

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