

CO-010 - (21SPP-11461) - SALIVA MOLECULAR TESTING BYPASSING RNA EXTRACTION IS SUITABLE FOR MONITORING AND DIAGNOSING SARS-COV-2 IN CHILDREN

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Introdução e Objectivos

Methods to easily test SARS-CoV-2 infected children and determine infectivity are in demand. We aimed to determine saliva RT-qPCR accuracy for SARS-CoV-2 detection in children.

Metodologia

Application of SARS-CoV-2 RT-qPCR in saliva, with and without RNA extraction, in children up to 10-years-old admitted to hospital, regardless of symptoms. Saliva samples were collected up to 48h of a positive test by RT-qPCR on nasopharyngeal swab.

Resultados

Eighty five children were included, mean age of 3.8 years (28 <1year), 29 with COVID19 and the remaining asymptomatic. Sensitivity, specificity and accuracy of saliva RT-qPCR tests for children below 1-year were 87, 100 and 89.3% with RNA extraction and 86.4, 100 and 88.9% without RNA extraction, compared to nasopharyngeal swabs. Overall, for children up to 10-years-old: 84.5%, 100% and 91.8% with RNA extraction and 81.8%, 100% and 90.4% without RNA extraction. 8 out of 8 salivas with CTs below 26, from symptomatic and asymptomatic cases, resulted in productive viral infections, whilst 4 out of 4 samples above CT 26 as well as 9 out of 9 negative SARS-CoV-2 samples did not. Antibodies specific for spike and its receptor-binding-domain were only significant for IgMs in the case of discrepancy between NP swab and saliva sampling in SARS-CoV-2 positive cases, with 33.3% children in this group being positive for IgM.

Conclusões

Saliva is a suitable sample to detect SARS-CoV-2 RNA in children up to 10-years-old, even bypassing RNA extraction methods. Levels of viral RNA detected were significantly above the infectivity threshold. Further investigation is required to understand if SARS-CoV-2 RNA levels vary during the day and to correlate them with viral transmission.

Palavras-chave : COVID19, SARS-CoV-2