**Infecciologia | Casuística / Investigação**

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

Tiago Milheiro Silva[1]; Marta Alenquer[2]; Filipe Ferreira[2]; Onome Akpogheneta[3]; Mónica Medina-Lopes[2]; Ana Margarida Garcia[1]; Vasco Barreto[4]; Cathy Paulino[5]; João Costa[5]; João Sobral[5]; Maria Diniz-Da-Costa[5]; Susana Ladeiro[5]; José Delgado Alves[4]; Jocelyne Demengeot[3]; Ricardo B. Leite[5]; Maria João Brito[1]; Maria João Amorim[2]

1 - Unidade de Infecciologia, Área de Pediatria Médica. Hospital Dona Estefânia. Centro Hospitalar Universitário Lisboa Central.; 2 - Cell Biology of Viral Infection Lab, Instituto Gulbenkian de Ciência, Oeiras, Portugal; 3 - Lymphocyt Physiology Lab, Instituto Gulbenkian da Ciência, Oeiras, Portugal; 4 - CEDOC NOVA, Centro de Estudos de Doenças Crónicas, Nova Medical School, Universidade Nova de Lisboa; 5 - Genomics Unit, Instituto Gulbenkian da Ciência, Oeiras

**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**