
Late Breaking Abstract - Saliva as an alternative to nasopharyngeal swabs for detection of respiratory syncytial virus (RSV) in children

A. Langedijk (Utrecht, Netherlands), O. Allicock (New Haven, United States), M. Van Wijk (Utrecht, Netherlands), D. Yolda-Carr (New Haven, United States), D. Weinberger (New Haven, United States), A. Wyllie (New Haven, United States), L. Bont (Utrecht, Netherlands)

INTRODUCTION. Nasopharyngeal swabs (NPS) are considered the gold standard for diagnosis of respiratory syncytial virus (RSV). Although highly sensitive, NPS come with sampling burden, a time interval between sampling and PCR test results, and high personnel and resource costs. Moreover, collection can cause discomfort in the patient. A saliva-based method for RSV detection would make large-scale and frequent clinical and community sampling more feasible. In this study, we evaluated detection of RSV in paired NPS and saliva samples.

METHODS. Matched NPS and saliva samples were obtained by trained study personnel from hospitalised infants with viral respiratory infection. NPS and saliva samples were tested with SalivaDirect+, a saliva-based PCR test authorized by the US FDA for detection of SARS-CoV-2, expanded to also target RSV. **RESULTS.** To date, 29 paired samples have been collected from infants with medically-attended respiratory infections. As a proof of concept, we analysed the first 10 samples including 5 samples from RSV positive infants and 5 from infants with other respiratory viruses. RSV, rhinovirus, and enterovirus could be detected in all 10 samples in both NPS and saliva. Sampling discomfort was considered to be significantly higher for NPS compared to saliva. More data will be available at the time of the conference. **CONCLUSION.** We detected RSV in all saliva samples. Our preliminary findings indicate that saliva is a viable and preferable alternative to NPS for RSV detection. Saliva could allow for frequent repeated testing. With further validation, widespread implementation of saliva sampling could transform RSV diagnosis and surveillance in children.