

Deep Throat Saliva as Alternative Specimen for Detection of SARS-CoV-2 Using RT-PCR

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Objectives: Naso/oropharyngeal (NPS/OPS) swabs are widely accepted as the main specimens for detection of SARS-CoV-2, however, due to its limitation, easier and safer sampling methods are proposed, including deep throat saliva (DTS). The aim of this study is to evaluate the result performance of DTS specimen and its correlation with NPS/OPS specimen using reverse-transcription polymerase chain reaction (RT-PCR) and to review the possible factors that can affect the result.

Methods: A cross-sectional study was conducted in the first week of April 2021, with a total of 65 patient-matched paired specimens were received and analysed. A set of NPS/OPS and DTS from the same patient were collected simultaneously at the selected Klinik Kesihatan from each district. A briefing on proper DTS collection and other related procedures was demonstrated to the Klinik Kesihatan prior to the study. All specimens were tested for SARS-CoV-2 by RT-PCR.

Results: The overall agreement between NPS/OPS and DTS RT-PCR was 95.4%. The sensitivity of the DTS specimen was 81.8% with a specificity of 98%. The estimated PPV and NPV were 90% and 96.4% respectively. All the discrepancy results involve cycle threshold (CT) values of more than 30 with no logistic issue identified. Nine (9) DTS specimens were detected for SARS-CoV-2 with almost equal distribution among male and female, the median age of 33 and most were close contacts of confirmed cases and were asymptomatic.

Conclusion: DTS specimen is a valid alternative to NPS/OPS for RT PCR SARS-CoV-2. Nonetheless, further studies are needed by involving a larger sample size and more positive specimens with a wide range of CT values.

Keywords: DTS, NPS/OPS, SARS-CoV-2

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