



Performance of SARS-CoV-2 rapid antigen test (RAT) compared with real-time PCR (RT-PCT)



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INTRODUCTION Malaysia had reached 5 million COVID-19 cases as of March 2023. Perak alone recorded 236,756 cases with 2,522 deaths. The use of rapid antigen test (RAT) for Covid screening is highly significant and beneficial since it is inexpensive, convenient and provides fast results compared to the real-time polymerase chain reaction (RT-PCR) test.

OBJECTIVE This study aims to show evidence that RAT is comparable with RT-PCR.

METHOD

46,909

cases in Perak were reported through SIMKA (Jan-Jun 2021)

Exclusion : 795
(insufficient patient data)

46,114

cases selected for data cleaning

Exclusion : 1156
(test requested other than RAT & RT-PCR)

44,958

cases selected for data cleaning

Exclusion : 34,318
(duplicate data)

10,640

cases selected for data cleaning

Exclusion : 9574
(incomparable data >24 hours apart)

1,066

cases selected for the study

RESULTS

Sensitivity

76.8%
95% CI : 5.6

Specificity

99.4%
95% CI : 0.24

Accuracy
98.7%
95% CI : 0.18

87.6%
95% CI : 4.6

PPV

98.7%
95% CI : 0.35

NPV

Cohen's kappa (κ) = **0.81** ± 0.043
95% CI : 0.08

** Indication of a **solid agreement** between both results of RAT and RT-PCR

CONCLUSION This study proves that RAT performance is consistent with RT-PCR.

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