PENGARUH SUHU DAN LAMA SIMPAN SPESIMEN *SEVERE ACUTE RESPIRATORY SYNDROME CORONAVIRUS 2 (SARS-CoV-2)* TERHADAP HASIL PEMERIKSAAN RT-qPCR

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ABSTRAK

Penyakit Coronavirus Disease 2019 (COVID-19) disebabkan virus corona jenis baru, yakni virus 2019-nCoV, yang kini dikenal dengan sebutan virus *SARS-CoV-2* (*Severe Acute Respiratory Syndrome Coronavirus 2*). *Quantitative Reverse Transcriptase Polymerase Chain Reaction* (RT-qPCR) dianggap sebagai uji laboratorium diagnostik konfirmasi *gold standart* untuk COVID-19. Jumlah RNA *SARS-CoV-2* dalam spesimen klinis dilaporkan dengan nilai *cycle threshold* (Ct) untuk RT-qPCR. Dalam keadaan tertentu banyak spesimen perlu disimpan atau dikirim ke laboratorium yang berpengalaman dalam pengujian *SARS-CoV-2*. Tujuan penelitian ini adalah untuk melihat apakah terdapat pengaruh suhu dan lama penyimpanan spesimen *severe acute respiratory syndrome coronavirus* 2 (*SARS-CoV-2*) terhadap hasil pemeriksaan RT-qPCR. Pada penelitian ini penggunaan variasi suhu 2-8 °C dan -20°C serta pengaruh lama penyimpanan 0, 3, 6, 9, 12 dan 17 hari didapatkan hasil uji normalitas P > 0.05 maka data berdistribusi normal. Hasil uji t-test didapatkan hasil 1 nilai Asymp. Sig.<0,05 pada variasi nilai 21≤Ct ≤ 30 gen ORF1ab maka terdapat pengaruh bermakna secara statistik sedangkan pada variasi nilai Ct ≤ 20 gen (ORF1ab, gen N dan gen E), 21≤ Ct ≤ 30 (gen N dan gen E) dan 31≤ Ct ≤ 38 (ORF1ab, gen N dan gen E) nilai Asymp. Sig.>0,05 maka tidak terdapat pengaruh bermakna secara statistik. Meskipun terdapat 1 hasil yang menunjukan hasil signifikan secara statistik (nilai 21≤ Ct ≤ 30 gen ORF1ab), perbedaan rata-rata nilai Ct dari kondisi suhu dan lama penyimpanan tidak signifikan secara klinis. Berdasarkan hasil uji tersebut maka dapat disimpulkan dari keseluruhan hasil bahwa tidak terdapat pengaruh suhu dan lama simpan penyimpanan spesimen *severe acute respiratory syndrome coronavirus* 2 (*SARS-CoV-2*) terhadap hasil pemeriksaan RT-qPCR.

Kata kunci : *SARS-CoV-2*, RT-qPCR, suhu dan lama simpan

Effect of Temperature and Storage Time of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) specimen on Results of RT-qPCR

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ABSTRACT

Coronavirus Disease 2019 (COVID-19) is caused by a new type of coronavirus, the 2019-nCoV virus, now known as SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus 2) virus. Quantitative Reverse Transcriptase Polymerase Chain Reaction (RT-qPCR) is considered a gold standart confirmation diagnostic laboratory test for COVID-19. The amount of SARS-CoV-2 RNA in clinical specimens is reported with a cycle threshold (Ct) value for RT-qPCR. Under certain circumstances many specimens need to be stored or sent to laboratories experienced in SARS-CoV-2 testing. The purpose of this study was to see if there was an influence on the temperature and length of storage of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) specimens on the results of RT-qPCR examination. In this study, the use of temperature variations of 2-8 °C and -20 °C and the influence of long storage of 0, 3, 6, 9, 12 and 17 days obtained the results of the P > 0.05 normal normality test, the data is normally distributed. T-test results obtained results of 1 Asymp value. Sig.<0.05 on the value variation of 21≤Ct ≤ 30 gen ORF1ab then there is a statistically meaningful influence while in the variation of ct value ≤ 20 genes (ORF1ab, N and gen E genes), 21≤ Ct ≤ 30 (N gene and E gene) and 31≤ Ct ≤ 38 (ORF1ab, N gene and E gene) asymp values. Sig.>0.05 then there is no statistically meaningful influence. Although there was one result that showed statistically significant results (a value of 21≤ Ct ≤ 30 orf1ab genes), the average difference in Ct values from temperature conditions and length of storage was not clinically significant. Based on the results of the test, it can be concluded from keseluruhan results that there is no influence of temperature and long storage of specimens severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) against the results of RT-qPCR.

Keyword: SARS-CoV-2, RT-qPCR Temperature and Storage Time