

Consideration of the cycle threshold values from real time rt-pcr sars-cov-2 interpretation for the clinicians: Analysis of 339 positive cases from a referral laboratory in Jakarta, Indonesia

R. Fera Ibrahim, author; Augustine Natasha, author; Yulia Rosa Saharman, author; Andi Yasmon, author; Fithriyah, author; Anis Karuniawati, author; Selvia Ganiesa, author; Pratiwi Sudarmono, author

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Abstrak

Background: real-time RT-PCR was recommended by WHO for COVID-19 diagnosis. The cycle threshold (Ct) values were expected to have an association with clinical manifestation. However, the diagnostic modalities such as quantitative molecular detection and virus isolation were not yet available for the routine test. This study has been conducted to analyze the relationship between the Ct values of qualitative rRT-PCR and the clinical manifestation and to describe the factors determining the result. Methods: from March to April 2020, specimens were sent to our laboratory from different healthcare centers in Jakarta. The patient's characteristic and clinical manifestation were extracted from the specimen's epidemiology forms. The specimens extracted and tested using rRT-PCR, and the Ct value were collected. The data were analyzed using the appropriate statistic test.

Results: from 339 positive results, the mild to moderate case was 176 (52%) and the severe cases was 163 (48%). Female was dominant in the mild to moderate cases (58%), while the male was prevalent in the severe cases (60%). The median age for mild to moderate case was 35 years old and severe cases was 49 years old. Statistical analysis found relationship between both group with gender ($p = 0.001$) and age ($p < 0.001$), but not with the Ct value. Conclusion: many variables in specimen sampling and processing could affect the Ct value result. In addition, the disease's severity was depended with the host immune response, regardless the number of virus. There was suggested no significant difference between the Ct values of mild-moderate and severe COVID-19, and thus should not be loosely interpreted.