

LETTER TO THE EDITOR

Anti-Spike Antibody Test, Accuracy and Misidentification: Implication in Interpretation of COVID-19 Vaccine Efficacy

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Dear Editor, COVID-19 is a new disease caused by SARS CoV-2. After its first occurrence in China, it rapidly spread worldwide and finally resulting in a pandemic [1]. The recent introduction of new COVID-19 vaccinations brings the hope for success of pandemic control. For monitoring of COVID-19 vaccination efficacy, an important clinical laboratory parameter is the antibody test. The anti-spike antibody is a parameter reported for presenting efficacy of new COVID-19 vaccination.

In clinical pathology, interpretation of anti-spike antibody must be done carefully. Regarding anti-spike antibody, the reported sensitivity and specificity are 93% and 97%, respectively [2]. It means the accuracy of the test is 90%. Additionally, the misinterpretation for predicting virus neutralization rate is up to 5% [2]. The mentioned factors can have a significant effect in interpretation of COVID-19 vaccine efficacy.

For example, recent public data (<https://www.bangkok>

biznews.com/news/detail/933764) on efficacy of an inactivated COVID-19 vaccine from an Indochina country showed that the anti-spike antibody could be detected in 99.4% and 92.4% of subjects with post 2nd dose vaccination and post natural infection at 1 month, respectively. If we apply the possible effects from diagnostic inaccuracy and misinterpretation, the range of possible anti-spike antibody predicting neutralization will be 84.4% - 100% and 77.4% - 100% for subjects with post 2nd dose vaccination and post natural infection at 1 month, respectively. The overlapping of expected vaccine efficacy compared to natural immunity after natural infection is observed. Therefore, if anti-spike antibody test is used for assess efficacy of a new COVID-19, the interpretation of result must be done carefully.

Declaration of Interest:

None.

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