

LETTER TO THE EDITOR

Estimated Adjusted Rate of Asymptomatic COVID-19 Among General Pediatric Population Based on Anti-Nucleocapsid Antibody Test

Pathum Sookaromdee¹ and Viroj Wiwanitkit²

¹ Private Academic Consultant, Bangkok, Thailand

² Honorary Professor, Dr. DY Patil Vidyapeeth, Pune, India

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Correspondence:

Pathum Sookaromdee
Private Academic Consultant
Bangkok
Thailand
Email: pathumsook@gmail.com

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Self-testing for coronavirus illness that is both quick and accurate for COVID-19 diagnoses are now required in order to determine the true number of patients worldwide and to take necessary medical and governmental actions. Antibody assays that have recently been approved assess antibody reactivity to spike proteins, which are produced in the body in response to infection and immunization. As a result, future antibody studies in communities with high vaccination coverage will be unable to distinguish between prior SARS-CoV-2 infection and SARS-CoV-2 immunization. Current immunizations are unlikely to cause a nucleocapsid response [1]. As a result, antibody testing targeting nucleocapsid proteins may be able to detect prior infection in patients who have been vaccinated [1].

Based on evidence of positive nucleocapsid antibodies, this study aims to assess the presence of previous natural COVID-19 antibodies among vaccinees. The projected rate of positivity is based on publicly accessible data from a poor country in Southeast Asia on the positive rate of anti-nucleocapsid antibodies among pediatric population enrolling in mass COVID-19 vaccination programs who reported no history of symptomatic COVID-19 (data available online at <https://mgonline.com/onlinesection/detail/965000027547>). The expected asymptomatic COVID-19 rate among this pediatric population is determined based on the 95 percent confidence interval and adjusted by reported annual decline

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of positive rate of anti-nucleocapsid antibody. According to the previous report, within a 1-year period, the rate declined from 86.7% to 21.5% or equal to 28% [2]. According to the primary data, anti-nucleocapsid antibody has a positive rate of 6.3%. When adjusted by annual decline rate, the adjusted expected confidence interval is equal to 22.5% with an expected rate of 8.2% to 49.6%.

Although asymptomatic COVID-19 is usually mentioned, the exact data on the rate is infrequently reported and the specific rate among pediatric population is mentioned less. Based on this report, the expected rate of asymptomatic COVID-19 is considerably higher among the pediatric population. This might imply the mild nature of infection among pediatric patients. Also, the interpretation of existing data on cumulative cases should be taken with a recognition on underdiagnosis of asymptomatic COVID-19 rate. Furthermore, any vaccine efficacy reports should be tempered by the presence of unknown pre-vaccination asymptomatic COVID-19.

Declaration of Interest:

None.

References:

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