



KINETICS OF SARS-CoV-2 NEUTRALIZING ANTIBODIES AFTER TWO DOSES OF BNT162b2 VACCINE IN HEALTHCARE WORKERS DURING THE COVID-19 PANDEMIC

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The neutralizing antibody can bind to the surface of viral particles and block the entry of the virus to infected cell, by interrupting the interaction of receptor binding domain and its receptor ACE2. For detection of these antibodies is used MAGLUMI® Neutralizing Antibody (NAb) kit. Due to their close contact with patients, HCWs have an increased risk of infection with coronavirus. The aim of this study was to evaluate the duration of BNT162b2 NAb during the 4th week, 3 months and 6 months in vaccinated HCWs. The study included 131 participants, who received the two-dose BNT162b2 regimen. Of them, 85 (64.9%) were female and 46 (35.1%) were male, with a mean age ($\pm$ SD) of 45.2 ± 10.31 (range 26-55) years. 91 HCWs were seronegative and 40 were seropositive at baseline. CLIA method was used for measuring NAb. The results of our study showed that vaccination with two doses of BNT162b2 causes antibody production in 99.88% of HCWs. Our data also showed that HCWs who had previous SARS-CoV-2 infection had a significantly higher NAb titer. The production of NAb was high 21-28 days post-vaccination (206-6.359 IU/ml, median 1.053 IU/ml) in all participants, but they had a significant decline in NAb levels by day 40 post-vaccination. There are needed further investigations of strategies to evaluate the long-term duration of NAb after immunization and to collect other clinical data about safety and efficacy of vaccines in severe disease progression.

Keywords: COVID-19, mRNA vaccine, Neutralizing antibodies, Sars-Cov-2, Maglumi-800.

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