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Opinion Article

Disease Control and Prevention Trends in SARS-COV-2

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DESCRIPTION

COVID-19 is still a global epidemic that has a big impact on the world's healthcare and economic systems. Governments have implemented vaccination programmes and started serologic testing to ascertain the sero prevalence in the population as part of control measures [1].

While vaccination efficacies range from 50%-95%, positive sero-conversion following infection has been shown to give up to 90% protection from reinfection. It is currently unclear how long-term antibody defence against re-infection after COVID-19 and/or vaccination works. Due to the different populations examined, the measuring assays used, the virus variations, and the vaccine types, there is currently conflicting evidence regarding the evolution of antibody titter post-exposure spanning from 3 months to 1 year [2]. The Centers for Disease Control and Prevention (CDC) do not currently support the use of antibody testing as a method of evaluating immunity following vaccination or as a COVID-19 diagnostic tool (CDC, 2021)[3].The Spike protein's receptor binding domain (RBD) interacts with the angiotensin-converting enzyme 2(ACE 2) receptor on the host cell to allow SARS-CoV-2 to enter host cells. In order to determine previous infections or vaccinations, the Spike protein has been established a target for vaccine modelling and serological testing [4]. Nucleocapsid, an abundant protein within the SARS-CoV-2 involved in genome packaging, is also a serological target where Nucleocapsid antibodies are utilised to signal prior infection and immunisation with inactivated virus. In addition to the Spike protein.

The authors retrospectively analysed antibody patterns among BP Healthcare personnel to map out the learning curve in comprehending SARS-CoV-2 antibodies in light of the quickly developing data and strong uptake of SARS-CoV-2 antibody tests [5]. The study seeks to assess the sero prevalence of employees against SARS-CoV-2 and to compare antibody levels across vaccine types, between demographic variables, between infected and non-infected employees, as well as to evaluate antibody concentration trends over time. According to the authors' knowledge, this is the first study to compare SARS-CoV-2 antibody patterns in multi ethnic Malaysia among several vaccine types.

CONCLUSION

A total of 156 subjects gave their agreement to take part in the study, however 8 of them were eliminated because their test results were missing, leaving a final total of 148 subjects. A total of 174 antibody test sets were produced when 20 subjects repeated their antibody tests twice and another 3 subjects did so three times. The study cohort was primarily made up of young women, with a median age of 29 years and a gender dominance of 76.4%. All individuals finally received two doses of the vaccine, however three antibody tests were performed first, including two that belonged to a post-infection subject. Table 1 presents a detailed summary of the study cohort. Regardless of vaccine type, all immunised workers without a history of COVID-19 infection were successfully seroconverted at one month following immunisation based on the positive cut-off of 50 AU/mL for IgG Spike(RBD).Prior to immunisation, only one uninfected individual underwent IgG Spike (RBD) testing, and the result was 3 AU/mL, which is considered negative. IgG Spike (RBD) for the same patient later climbed to 4 256.5 AU/mL on day 14 following the Comirnaty vaccine.

Regardless of the vaccine type, seroconversion was successfully accomplished in all immunised participants.

When compared to COVID-19 naive participants and ChAdOx1 and Corona Vac vaccines, the Comirnaty shown higher immunogenicity. Convalescent subjects also exhibited higher antibody responses. Additionally, it was shown that certain ethnic groups and women had higher antibody

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