Korelasi Titer IgG Anti-S1 RBD dengan Total Antibodi Representasi Netralisasi SARS-CoV-2 dari Subjek yang Diimunisasi dengan Vaksin Inaktif dan Booster mRNA = Correlation of IgG Anti-S1 RBD Titer with Total Surrogate Neutralizing Antibody of SARS-CoV-2 in Subject Immunized with Inactivated Vaccine and mRNA Booster

Ulfi Rahma Efrianti, author

Abstrak

Antibodi yang diproduksi oleh sel plasma sebagai respon terhadap vaksin COVID-19 terdiri dari antibodi netralisasi dan antibodi non-netralisasi. Antibodi netralisasi penting untuk perlindungan terhadap infeksi SARS-CoV-2. Standar baku untuk mengukur tingkat antibodi netralisasi melalui uji Plaque Reduction Neutralization Test (PRNT) yang membutuhkan patogen hidup dan fasilitas Biosafety Level 3 (BSL3). Metode lain yang mudah dilakukan untuk mengukur IgG Anti-S1 RBD ataupun total antibodi representasi netralisasi melalui uji ELISA. Penelitian ini bertujuan untuk mengetahui hubungan titer IgG Anti-S1 RBD dengan total antibodi representasi SARS-CoV-2 pada subjek yang divaksinasi serta kaitannya dengan umur dan jenis kelamin. Titer IgG Anti-S1 RBD ditentukan menggunakan uji
indirect ELISA. Pengukuran persen inhibisi dari antibodi netralisasi menggunakan metode sVNT. Studi cross-sectional dilakukan pada 20 sampel plasma yang diimunisasi dengan seri primer CoronaVac dan 36 sampel plasma pasca-vaksinasi booster (dosis ketiga) dengan mRNA-1273. Hasil penelitian ini menunjukkan tidak terdapat perbedaan titer IgG Anti-S1 RBD dan total antibodi representasi netralisasi pada pria dan wanita maupun pada kelompok usia. Sementara itu, didapatkan korelasi kuat antara IgG Anti-S1 RBD dan total antibodi representasi netralisasi
pada kelompok sampel yang menerima vaksin inaktif (r = 0,720, p-value <0,0001) maupun pada kelompok subjek booster mRNA (r = 0,821, p-value < 0,0001).
.....Antibodies produced by plasma cells in response to the COVID-19 vaccine consist of neutralizing antibodies and non-neutralizing antibodies. Neutralizing antibodies are important for protection against the SARS-CoV-2 infection. The standard for measuring the level of neutralizing antibodies is the Plaque Reduction Neutralization Test (PRNT), which requires live pathogens and Biosafety Level 3 (BSL3) facilities. Another easy method to measure IgG Anti-S1 RBD or total surrogate neutralizing via ELISA. This study aims to determine the relationship between anti-S1 RBD IgG titer and total surrogate neutralizing antibody in vaccinated subjects, as well as its relationship with age and gender. Anti-S1 RBD IgG titer were determined using an indirect ELISA assay. Measurement of percent inhibition of neutralizing antibodies using the sVNT method. A cross-sectional study was conducted on 20 plasma samples immunized with the CoronaVac primer series and 36 post-vaccination booster (third dose) plasma samples with mRNA-1273. The results of this study showed no difference in anti-S1 RBD IgG titer and total surrogate neutralizing antibody between men and women or in age groups. Meanwhile, a strong correlation was found between Anti-S1 RBD IgG titer and total surrogate neutralizing antibody in the sample group that received the inactivated vaccine (r = 0.720, p-value <0.0001) and also in the mRNA booster subject group (r = 0.821, p-value < 0.0001).