HUMORAL AND CELLULAR IMMUNE RESPONSE AFTER VACCINATION AGAINST COVID-19

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Vaccination against COVID-19 was performed to activate cellular and humoral immune response.

The aim of the study was to determine anti-SARS-CoV-2 IgG and T-lymphocyte response to specific SARS-CoV-2 stimulus by releasing interferon gamma (INF-γ), in healthy volunteers six month after vaccination.

The study group consisted of 80 persons (69 females, 11 males), aged 20-71, from the staff of the University Hospital in Poznan. The blood was collected six month after vaccination with mRNA vaccine Comirnaty. The concentration of Anti-SARS-CoV-2-IgG was measured with indirect chemiluminescence test on Atellica IM Analyzer (Siemens Healthineers, Germany). IFN-γ was determined using Interferon-Gamma Release Assay (IGRA) (Euroimmun, Germany) and microplater reader (Tecan, Switzerland).

All subjects were positive for Anti-SARS-CoV-2-IgG, but not all were positive for IGRA. Both parameters were higher in people suffering from COVID-19 before the test. Age and BMI were negatively correlated with Anti-SARS-CoV-2-IgG. Overweight/obese persons had lower Anti-SARS-CoV-2-IgG than underweight/normal body mass subjects. Positive correlation between Anti-SARS-CoV-2-IgG and IGRA was observed.

SARS-CoV-2 infection followed by vaccination against SARS-CoV-2 resulted in more robust humoral and cellular response than vaccination itself. The negative correlation between the antibodies and age indicates a weakening of the ability for an effective post-vaccine immune response with age.