Production of Antibodies in Patients Infected With SARS-CoV-2

Biteznik, Eva (School: Gimnazija Kranj)

In this research paper, the effect of age, gender, comorbidities and dexamethasone on the time until IgM and IgG antibodies appear in the bloodstreams of hospitalized patients, infected with SARS- CoV-2 was studied retrospectively. Antibody levels were measured in sera of adult patients (aged 24-99) hospitalized between September 4 and November 27, 2020 at the University Clinic of Respiratory and Allergic Diseases Golnik. Pertinent clinical information including gender, age, comorbidities, receival of a systemic anti-inflammatory drug dexamethasone and antibody measurement results using enzyme-linked immunosorbent assays (ELISA) were obtained from a clinical study taking place at the clinic, with additional information pertaining disease onset obtained from the hospital informatics system, BIRPIS. The final datasheet stratified patients according to age, gender, comorbidities and receival of dexamethasone. Then, the time from symptom onset until antibodies of either type could be detected, was calculated. Statistical analysis was performed using Student's t- test, Mann-Whitney's test, Fisher's exact test, as well as multiple linear regression. GraphPad was used to visualize the information thus obtained. Based on information obtained from existing studies, faster generation of antibodies was expected in patients under 65 years of age, in females, in patients without comorbidities and in patients, who didn't receive dexamethasone. Except for patients with malignancies (where antibody generation appeared impaired), the study didn't show a significant difference in the time of antibody appearance between groups stratified by age, gender, the presence of comorbidities or receival of dexamethasone.

Awards Won: