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Abstract

Background: Antibody testing can complement molecular assays for detecting COVID-19.

Aims: We evaluated the concurrence between lateral flow assay and enzyme-linked immunosorbent assay (ELISA) for the detection of antibodies in severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2).

Methods: The study was conducted at Kocaeli University, Türkiye. We used a lateral flow assay and ELISA to test serum samples from COVID-19 cases, confirmed by polymerase chain reaction assays (study group) and pre-pandemic stored serum samples (control group). We used Deming regression to evaluate the antibody measurements.

Results: The study group included 100 COVID-19 cases, and the control group included pre-pandemic samples from 156 individuals. The lateral flow assay detected immunoglobulin M (IgM) and G (IgG) antibodies in 35 and 37 study group samples. ELISA detected IgM nucleocapsid (N) antibodies in 18 samples, and IgG (N) and IgG spike 1 (S1) antibodies in 31 and 29 samples, respectively. None of the techniques detected antibodies in the control samples. Strong correlations were found between lateral flow IgG (N+ receptor-binding domain + S1) and ELISA IgG (S) (r = 0.93, P