

ABSTARCT:

SARS-CoV-2 was first appeared in Wuhan city of China. As it was increasing through the water droplets after coughing and sneezing of infectious person so, soon it became a pandemic. SARS-CoV-2 is belong to corona virus family so, it is RNA based enveloped virus. The spike proteins have specific receptor binding sites to bind with Angiotensin Converting Enzyme (ACE-2) receptors on human cells. After binding virus gets penetration into the host cells and replicate without any hurdle. Human body formed the antibodies against the receptor binding domains (RBDs) of virus. These antibodies neutralize the effect of virus by stopping the entry of virus into the host cell. So, virus become unable to replicate. These anti-spike anti-RBD antibodies stop the reinfection and critical stage of disease. In this study, production of neutralizing antibodies was detected after exposure with the COVID-19 infection in population. Study was conducted in Jinnah Hospital Lahore, from where 182 blood samples of COVID-19 infected patients were collected. Nasopharyngeal samples were taken for the confirmation of COVID-19 through PCR. Sign and symptoms during COVID-19 infection were noted and after 21 days, antibody testing were performed with the standard chemiluminescence method and fully automated analyzer was used. Among these 182 patients, 57% were male and remaining 43% were females. Samples were collected from patients of all ages and most of the patients from the age between 31 to 45 years old. In males, reactive neutralizing antibodies were 95% and in females it was 91% only. Antibodies were maximum produced in patients with age < 15 years and minimum of 80% in patients greater than >61 years old. Over in population, it was noted that 92.85% population produced reactive neutralizing antibodies against RBDs of spike proteins and 7.15% population did not produced these antibodies. Chai square test was applied to check the any association between the antibodies formation and groups included in our study. It was noticed after chai square test; two major factors contribute in the development of antibodies after infection. For both groups value of level of significance was less than 0.05. Majority of population produced reactive neutralizing antibodies against spike proteins of virus but not whole. So, majority of population remain protected from reinfection of COVID-19 and patients do not suffer with critical disease. But, patients with more age and other chronic diseases can suffer more critical stage of disease due to effected immune system.