

HUMORAL IMMUNE RESPONSE AGAINST SARS COV-2 INFECTION IN HOSPITALIZED COVID-19 PATIENTS AND HEALTHCARE WORKERS

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Background: COVID-19 is a worldwide pandemic causing huge burden on healthcare facilities. Most of the cases were asymptomatic and few were symptomatic. We still comprehensively did not know the exact estimated COVID-19 (symptomatic & asymptomatic) population. We had needed to identify the asymptomatic population of COVID-19 through the immune response of IgG antibody titer against spike protein of SARS CoV-2. The aim of the study is to determine the seroconversion in hospitalized COVID-19 patients and seroprevalence among healthcare workers and control community group against SARS CoV-2 infection. **Methods:** This observational study was carried out in COVID-19 unit of Bangabandhu Sheikh Mujib Medical University (BSMMU). Information about sociodemographic status, comorbidities, results of antibody response (IgG titer) and other relevant information was collected using a pre-designed data collection sheet. In this study, total 211 participants included and total 343 samples was taken for IgG titer measurement by ELISA method. The data was analyzed by SPSS version 25 and Graph pad prism version 8. Statistical analysis was done by using Chi-square test, Student's t-test or Mann-Whitney U test. Statistical significance was defined as p value ≤ 0.05 . **Results:** Among COVID-19 patients 58.6% (34) were male and 41.4% (24) were female, median (IQR) age was 45.5 (33 to 57) and median (IQR) Body Mass Index (BMI) was 25.4 (23.39 to 27.42). Among the Healthcare workers 54.9% (84) were male and 45.1% (69) were female, median (IQR) age was 30 (25 to 33) and median (IQR) Body Mass Index (BMI) was 24 (21.53 to 25.71). The antibody titer persisted for more than 3 months in all hospitalized patients and no one was seronegative during the study period. The overall seroprevalence of healthcare workers were 54.9% and Doctors- 38%, Nurses-53.84% & Support staff- 72.54%. Anti-spike IgG titer was significantly higher in severe diseases but had no significant change with age, sex, body mass index, or diabetic status. **Conclusion:** This study shows persistence of antibody titers after 3 months in recovered COVID-19 patients. The results demonstrate high seroprevalence among the healthcare workers and control community group.

Keywords: Humoral immune response, SARS COV-2 infection COVID-19 patients, healthcare workers

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