

Abstract

The height of the COVID-19 pandemic called for the utilization of government enforced methods to prevent disease transmission such as work from home and social distancing. Essential workers were exempt from such restrictions and thus put at a heightened risk of disease transmission, health burden, and subsequent economic loss. Limited data from the United States suggests an increased COVID-19 burden among essential workers in low to middle income countries (LMIC). Agricultural workers play a role in global food security and represent a major economic force. In Guatemala, these workers make up ~35% of the labor force and agricultural products make up ~45% of the country's exports, including supplying ~50% of the United State's bananas. In this cohort, we specifically aimed to investigate the seroprevalence for SARS-COV-2 over 1 year and the clinical correlation. Additionally, we aimed to investigate the chemical kinetics of SARS-COV-2 specific antibodies such as anti-spike and anti-nucleocapsid. Data regarding nucleocapsid antibody titers over time and the relationship these titers have to clinical symptomatology and viral infectivity can strengthen our understanding of immunity as it relates to SARS-COV-2. Preliminary data suggests seroprevalence between June 2020 and March 2021 increased from 0.20 at the time of enrollment to 0.46 (46.2%). With vaccination strategies in place and the possibility of re-infection in mind, we estimate the seroprevalence will continue to increase in this cohort. Preliminary results regarding antibody kinetics demonstrate approximately a 95% decrease in detectable nucleocapsid antibody within 6 months with an estimated decrease of 0.13 per day.