البحث الخامس

Seroprevalence of SARS-CoV-2 immunoglobulin G antibody during COVID-19 pandemic in Fayoum District, Egypt: a community-based pilot survey

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Abstract

Background: controlling the worldwide pandemic, coronavirus disease (COVID-19), could be impossible due to the hesitancy about the available vaccines and the difficulty to implement strict restrictions. Little information is available about herd immunity in the highly vulnerable region of North East Africa, Egypt. The objectives of this study were to assess the seroprevalence of SARS-CoV-2 during the pandemic in one of the highly vulnerable populations in Egypt, Fayoum district of Fayoum Governorate. Additionally, to assess the predictive value of symptoms and other associated risk factors towards a positive COVID-19 test.

Methods: in this cross-sectional community-based pilot study, immunoglobulin G (IgG) antibodies that are specific for the SARS-CoV- 2 spike (S1-RBD) protein were tested during the period from February 2021 to July 2021.

Results: out of 155 participants, 60.6% were SARS-CoV-2 seropositive. Out of symptomatic and asymptomatic individuals, 76.5% and 56.2% were seropositive, respectively. Surprisingly, only one individual had received the COVID-19 vaccine. Previous history of COVID-19; such as symptoms and gender are statistically significant predictors of high seroconversion independent of age, comorbidities, and level of education. Conclusion: this study which disclosed unexpectedly high SARS-CoV-2 seroconversion among the Egyptians, might provide a clear insight into COVID-19 transmission patterns and state of immunity. Further study with a larger sample size on a large scale is required to represent the whole local population.

Keywords: *Corona-virus, SARS-CoV-2, COVID-19, seroconversion, Egypt*