

FORMATION OF HERD IMMUNITY TO SARS-CoV-2 IN THE REGIONS OF UZBEKISTAN.

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Abstract

6 months after the start of the COVID-19 epidemic in Uzbekistan, a comparative analysis of the reported incidence of COVID-19 and the level of herd immunity to SARS-CoV-2 was carried out. The registration of patients with COVID-19 in the country was carried out on the basis of the positive results of the examination for the presence of SARS-CoV-2 RNA, using the PCR method. To study herd immunity, the WanTai SARS-CoV-2 Ab Rapid test (China) was used to detect total antibodies (IgM and IgG) in blood. In the period from August 27, 2020 to September 11, 2020, in all 14 administrative-territorial regions of Uzbekistan, blood samples of 86879 people who sought medical help at an outpatient clinic at their place of residence were tested for the presence of total antibodies to SARS-CoV-2. According to official figures, 0.14% of the population were infected with COVID-19. The proportion of the population with the presence of specific protective antibodies to the SARS-CoV-2 virus was 23.1%. This proves that the actual incidence of COVID-19, on the national average, was at least 165 times higher than officially reported. An uneven territorial distribution of the level of herd immunity was revealed. All regions were conditionally divided into 3 zones: 1) regions with a high level of herd immunity > 20% (8 regions), 2) regions with an average level of herd immunity < 20% and > 10% (3 regions), 3) regions with a low the level of herd immunity < 10% (3 regions). The degree of population affected in different regions of the county did not depend on the population density in the region, its age and gender composition. It was shown that the factors that influenced the intensity of the epidemic process and the formation of the level of herd immunity were the degree of external and internal migration.

Keywords:

SARS-CoV-2 COVID-19 IgM IgG herd immunity