

Severe Acute Respiratory Syndrome Coronavirus 2 Antibodies in Adults in Madrid, Spain

TO THE EDITOR—We read with interest the article by Huff and Singh [1] in which they highlight the role of asymptomatic transmissions of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The authors point out that “public health strategies relying solely on ‘symptom onset’ for identification of new cases need urgent reassessment.” We want to add that information derived from antibody testing may help to obtain a better picture of the coronavirus spread in a given region.

Madrid has been the region most severely hit by coronavirus disease 2019 (COVID-19) in Spain, with 65 000 confirmed cases and 9000 deaths as of 10 May 2020, 8 weeks after implementation of the country’s lockdown on 14 March [2]. We wanted to know to what extent these figures translated into high rates of antibody detection in the community, additionally unveiling asymptomatic cases and persons with symptoms who could not be tested due to a shortage of diagnostic tests at the peak of the epidemic.

We retrospectively analyzed all consecutive asymptomatic adults to whom voluntary testing had been offered at our university clinic in Madrid from the last week of April 2020 to the first 2 weeks of May 2020. Capillary blood was examined using the PCL

COVID-19 immunoglobulin (Ig) G/IgM Rapid Gold test (PCL Inc., Seoul, Republic of Korea), which is a rapid diagnostic test based on immunochromatography. Specific antibodies against SARS-CoV-2 are recognized using recombinant antigens for the nucleocapsid and the receptor binding domain of the spike protein. The test has received European Union and US Food and Drug Administration approval.

We tested 674 adults who belonged to different groups, including university employees and their family members, healthcare workers, social services personnel, and persons living in communities, religious or not. Overall, SARS-CoV-2 IgG antibodies were found in 93 persons (13.8%). Table 1 shows the seroprevalence rates in groups according to their living ties, that is, persons without a link, family members, and those living in communities of 10–25 persons. The seroprevalence was significantly greater in the latter group compared with the other groups (19.2% vs 10.9%; $P = .003$).

We found 3 independent clusters of COVID-19. One occurred in an apartment in downtown Madrid where 12 women were living together and acknowledged poor preventive measures. All became infected and then sick; 2 required hospitalization.

The second cluster involved 10 nonrelated individuals who met for 3

hours in a small meeting room. Three of them had just returned from Italy, and fever and cough began 2 days later. All became ill, and 1 required hospitalization in the intensive care unit.

The third cluster occurred in a community of 25 women who lived in a large house with open spaces and a big garden. Interestingly, while 21 of them became infected, none developed COVID-19 symptoms or symptoms were mild. Social distancing, being in open spaces, performing outdoor activities, frequent hand-washing, use of face masks, and intense house cleaning were all followed.

Recent seroprevalence surveys from New York State, Los Angeles, California, and Santa Clara, California, found SARS-CoV-2 antibody rates of 13.9%, 4.6%, and 2.8%, respectively, in early April 2020 [3]. Information from similar surveys in Europe is limited. In France, infection rates of 4.4% have been estimated nationwide based on data from hospitalizations and deaths, being up to 9.9% in Paris [4].

We found that roughly 10.9% of adults in Madrid (excluding those living in communities) had SARS-CoV-2 antibodies at the time of lockdown release on 10 May. Given that the population of the Madrid region is 6.6 million, the inferred number of infections would be greater than 700 000, which is more than 10-fold greater than the official

Table 1. Prevalence of Severe Acute Respiratory Syndrome Coronavirus 2 Antibodies in Madrid, Spain

Population	n	Male Sex, n (%)	Median Age (Range), y	Severe Acute Respiratory Syndrome Coronavirus 2 IgG+ ± IgM+, n (%)	Comment
University employees	175	36 (20.6)	44 (31–67)	17 (9.7)	
University employees’ relatives	85	23 (27.1)	41 (18–76)	7 (8.2)	
Social services and healthcare workers	108	96 (88.9)	42 (21–79)	14 (13.0)	
Individuals living in communities	234	20 (8.5)	60 (20–89)	45 (19.2)	1 cluster of symptomatic women 1 cluster of asymptomatic women
Others	72	26 (36.1)	53 (18–76)	10 (13.9)	1 cluster at work place
Total	674	201 (29.8)	42 (18–89)	93 (13.8)	

Abbreviation: Ig, immunoglobulin.

65 000 confirmed SARS-CoV-2 cases. We encourage others to perform similar serosurveys periodically and in other regions to allow proper comparisons of dynamics at distinct sites and the impact of preventive measures.

Note

Potential conflicts of interest. The authors: No reported conflicts of interest. All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest.

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