Title

Prevalence of SARS-Cov-2 Antibodies in Emergency Medicine Healthcare Workers

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We suspect that the confusion arose from our colleagues' misinterpretation of one of the inclusion criteria, which they characterize in their letter as "2 hours of emesis from presentation." The actual criterion[1] was "current episode greater than 2 hours of emesis" and thus did not require an additional 2 hours of ongoing emesis in the emergency department (ED) before any treatment. In fact, as reported in the Table,[2] the onset of emesis was 2 or more days before ED presentation in most patients, and half received the study intervention within 2 hours of presentation.

The correspondents also ask whether the patients who experienced akathisia or dystonia had been given other agents in addition to the study drug intervention of haloperidol at 0.1 mg/kg. Only 1 of these patients had received a modest dose of 25 mg diphenhydramine/8-chlorotheophylline intravenously 2 hours after the study drug and 1 hour before departure, but more than 24 hours before returning for dystonia. We agree that prophylaxis against dystonia is rarely warranted, especially after the more modest dose of haloperidol at 0.05 mg/kg.

Finally, it is routine in a clinical drug trial to exclude patients who have already received one of the study drugs or related active treatment. Nevertheless, we endorse and routinely use haloperidol for patients who have failed to improve with ondansetron and metoclopramide while being mindful of the potential for cumulative adverse effects, including delayed cardiac repolarization.

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Prevalence of SARS-Cov-2 Antibodies in Emergency Medicine Healthcare Workers

To the Editor:

Health care workers who frequently care for infected patients may be at higher risk of coronavirus disease 2019 (COVID-19) compared with the general population.[1] The emergency department (ED) represents a high-risk environment because the COVID-19 status of ED patients is frequently unknown, and ED providers must test for the disease and perform aerosol-generating procedures. A prior study of ED providers found severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) antibodies in 23 of 50 ED providers (46%) in New York City. We conducted this study to estimate the seroprevalence of SARS-CoV-2 antibodies in ED providers at an academic ED and review the clinical history of providers with evidence of prior infection.

We conducted a prospective, cross-sectional study to estimate the seroprevalence of antibodies to SARS-CoV-2 among ED providers (attending physicians, nurses, midlevel practitioners, patient care technicians, and pharmacists) at an academic medical center from September 1 to October 15, 2020. Exclusion criteria were pregnancy or immunocompromise. Participants underwent venipuncture to measure SARS-CoV-2 immunoglobulin G (IgG) antibodies. Samples were tested with a chemiluminescent immunoassay for IgG antibodies to the nucleocapsid antigen (Abbott Architect SARS-CoV-2 IgG; Abbot Laboratories, Abbott Park, IL). Positive results were confirmed by testing with a different chemiluminescent immunoassay for IgG antibodies to the S1/S2 spike antigens (Diasorin Liaison SARS-CoV-2 S1/S2 IgG; Diasorin Inc., Cypress, CA). Both assays have excellent test characteristics.

Of 360 ED patient care staff, 139 study participants were included: 90 women (64.7%) and 88 whites (63.3%), with a median age of 36 years (interquartile range 27 to 61). A total of 126 of 139 participants (90.6%) reported contact with COVID-19–positive patients, 10 of these (7.9%) without personal protective equipment. A total of 5 participants (3.6%) judged that they had a 76% to 100% likelihood for having antibodies. Four of the providers had antibodies to SARS-CoV-2, resulting in a seroprevalence of 4 of 139 (2.9%; exact 95% confidence interval 0.8% to 7.2%) (Table). Three of the 4 seropositive participants were emergency physicians who had a prior diagnosis of COVID-19 based on a prior positive polymerase chain reaction test result and judged that they had a 76% to

Table. Characteristics of the study participants.

Characteristic	Number	Percentage
Total N	139	
Sex		
Women	90	64.7
Race		
Asian	31	22.3
Black	4	2.9
White	88	63.3
Other/multiple	16	11.5
Ethnicity		
Latinx	15	10.8
Age		
Mean (SD)	38.2	9.5
Median (IQR)	36	27–61
Site		
Adult hospital ED	112	80.6
Children's hospital ED	27	19.4
Provider type		
ED nurse	64	46.0
Attending physician	31	22.3
Resident physician	23	16.5
Advanced practice provider	7	5.0
Patient care technician	9	6.5
Other	5	3.6
Prior diagnosis of COVID-19 based on PCR testing		
Yes	4	2.9
SARS-CoV-2 IgG test result		
Positive	4	2.9

IQR, Interquartile range; *PCR*, polymerase chain reaction.

100% likelihood of seropositivity. One seropositive participant, an ED nurse, had not received a prior diagnosis of COVID-19. This individual traveled at the beginning of February and subsequently developed fever and cough for 14 days, before the widespread availability of polymerase chain reaction testing.

A pediatric ED nurse reported traveling in February and subsequently experiencing symptoms of malaise, headache, loss of smell, and shortness of breath, leading to a positive polymerase chain reaction and positive antibody test result in May 2020; the nurse had a negative result in our study. Treating this individual as having had COVID-19 raises the prevalence of prior infection in our sample to 5 of 139=3.6% (exact 95% confidence interval 1.2% to 8.2%).

It is likely that seroprevalence among frontline providers varies with the cumulative incidence of COVID-19 in the communities they serve. The prevalence of prior infection in our sample is lower than the seroprevalence in some studies of frontline and ED providers, such as Vanderbilt,[2] Montefiore, and Coney Island Hospital,[3] reporting respective seroprevalences of 8.2%, 31.2%, and 46%. San Francisco has had a low seroprevalence of antibodies, with an age- and sex-adjusted seroprevalence of 1.0%.[4] We found a low SARS-CoV-2 seroprevalence among our ED providers, similar to other low community-seroprevalence EDs.

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