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Emergency department administration of COVID-19 antibody therapies: Early experience.

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Emergency department administration of COVID-19 antibody therapies: Early experience

The severe acute respiratory syndrome coronavirus 2 (SARS-Cov-2) was first reported in Wuhan, China in December 2019 [1]. Since then the disease termed coronavirus disease of 2019 (COVID-19) has been declared a pandemic by the World Health Organization has become an important cause or morbidity and mortality internationally. There have been more than 109 million cases of COVID-19 globally with more than 2.4 million deaths [2]. Hospitals have been pushed to their functional capacities making out-of-hospital management of the disease ever more important.

In late 2020, the FDA authorized two monoclonal antibody therapies (bamlanivumab and casarlivimab/imdeviimab) for administration under Emergency Use Authorizations (EUA) in outpatients with certain demographic and clinical characteristics [3,4]. Healthcare facilities in the United States have offered these therapies to patients in a variety of outpatient settings. Our institution elected to provide this treatment in the Emergency Department (ED) where potential antibody candidate patients could receive an intensive lab and radiologic evaluation ensuring that inpatient treatment was not needed. Here we describe the characteristics, comorbidities, and outcomes of 72 patients who were treated with these monoclonal antibody therapies in an urban academic emergency department between 12/1/2020 and 1/31/2021. We attempted to contact all patients who received either antibody treatment to evaluate whether they experienced clinical improvement.

If after the initial assessment (including laboratory and radiologic evaluation) it was determined that a patient was anticipated to be safe for discharge home, then each patient was offered treatment with monoclonal antibody therapies provided that they fulfilled the requirements outlined by the FDA EUA for each treatment [3,4]. Demographic data is included in Table 1. The most common comorbidities for which patients received treatment were hypertension (54%) and diabetes (33%). Three patients experienced side effects to the infusion in the ED. One patient experienced mild pruritus. Another experienced abdominal pain and nausea. A third experienced rapid atrial fibrillation. Average ED length of stay for all patients who received antibody therapies was 10 h and 47 min. In total, 3 (4.2%) patients were admitted from the ED on their initial visit. None of these was admitted to the ICU. An additional 3 (4.2%) patients were admitted after their initial ED discharge, with 2 (2.8%) requiring ICU level care. Average time to return to the ED was 1.6 days. Overall, there were no deaths.

A total of 49 (68%) patients were reached for follow-up questionnaires. Of these, 30 (62.5%) reported a significant decrease in COVID-19 symptoms in the 24 h after receiving the infusion. Only 5 (10.2%) reported side effects which they attributed to their infusion. The majority of these were gastrointestinal in nature including, abdominal pain, vomiting, diarrhea, and loss of appetite.

Our results suggest both therapies were effective in reducing hospitalization and symptom duration. Antibody infusion did prolong the average ED length of stay. However, early identification of potential candidates for antibody therapy, combined with a robust and rapid institutional COVID-19 testing program helped to streamline the process. With more virulent strains of coronavirus spreading throughout the country and an uncertain timeline for vaccine distribution for many, our findings suggest antibody these therapies are an important way to potentially decrease the burden of COVID-19 patients on inpatient hospital utilization.

Table 1
Patient demographics.

Age, years (mean)	65.5	
Female (*n*, %)	32	45.10%
Race/ethnicity (*n*, %)		
African American	32	44%
White	26	36%
Hispanic	3	4%
Asian	2	3%
Other	7	9%
Insurance (%)		
Private	49%	
Public	46%	
Other	4%	
Uninsured	1%	
Comorbidities (%)		
Hypertension	54%	
Diabetes	33%	
Asthma	11%	
COPD	10%	
Obesity	10%	
Antibody therapy (*n*, %)		
bamlanivimab	53	76.80%
casirivimab/imdevimab	16	23.20%
Average symptomatic days (mean)	3.97	
Average highest temperature in ED (celsius)	37.1	
Average lowest pulse oximetry in ED (%SpO2)	95.30%	

Declaration of Competing Interest

None.

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