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Authors

Matharu, Kabir
Westcott, Sarah

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SARS-COV-2 Neutralizing Monoclonal Antibody Therapy in a Congregate Setting

Kabir Matharu, MD(1,2), Sarah K Westcott, BA (2)

1. California Department of Corrections and Rehabilitation
2. University of California Davis Medical Center, Department of Internal Medicine, Division of Cardiovascular Medicine

BACKGROUND

- Severe acute respiratory syndrome coronavirus 2 (SARS-COV-2) causes coronavirus disease 2019 (COVID-19), which can range from mild symptoms to death from respiratory failure and multi-organ dysfunction.

- Correctional facilities serve as a nidus for infection due to limited space from overcrowding which is further complicated by an increasingly elderly and sick inmate population.

- California, which houses nearly 95,000 inmates, has the largest inmate population of any state in the US.

- LY-CoV555, also known as bamlanivimab, has been shown to reduce viral load in patients as soon as within one week of administration.

- This study reports data on inmate-patients who were offered LY-CoV555 therapy based on the EUA and clinical judgement of providers rounding on COVID patients at one correctional facility.

- No data exists on the utilization of LY-CoV555 and outcomes associated with its use in a congregate setting.

ACKNOWLEDGEMENT

METHODS

- In this observational study, inmates within a state correctional facility were offered LY-CoV555 consistent with the FDA's Emergency Use Authorization (EUA).

- In accordance with state and federal policy, the inmates were not given any incentive or punishment if they accepted or declined treatment.

- The primary outcome measure included the number of adverse outcomes from infusion and how many patients required a transfer to higher level of care secondary to COVID-related complications.
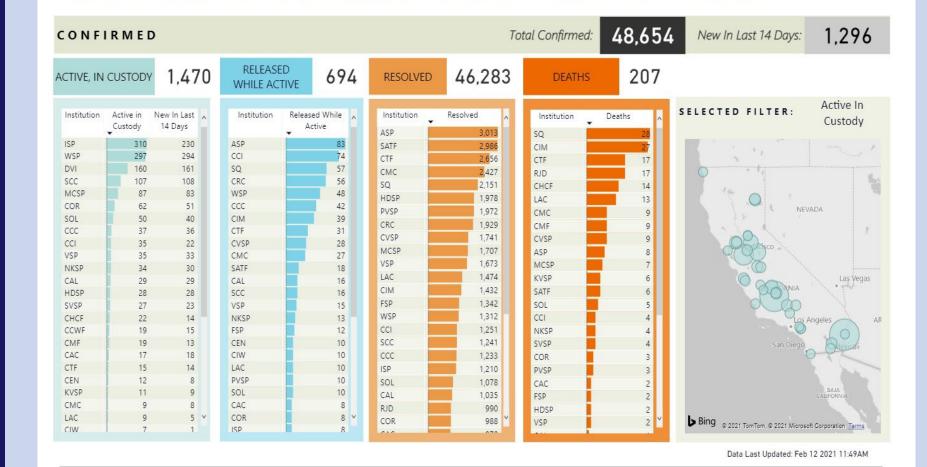

Figure 1. CDCR data regarding COVID-19 infections in prison populations in California . https://www.cdcr.ca.gov/covid19/population-status-tracking/

RESULTS

- At the time of analysis, no patients had an adverse reaction to the infusion and 2 patients out of 95 (2.1%) who received LY-CoV555 required transfer to an emergency room for management of COVID complications.

- The study included 38% of patients who were older than 65 years of age, 46% who were white, and 87% who were at high risk for developing severe COVID infection.

Table 1: Baseline characteristics and outcomes

Characteristic	
Age	
Median (range)- yr	60 (29-91)
65 yr or older — no. (%)	36 (37.9)
Male — no. (%)	95 (100)
Race/Ethnicity –no./total no. (%) *	
White, n (%)	44 (46.3)
Black, n (%)	13 (13.7)
Hispanic, n (%)	33 (34.7)
Other, n (%)	5 (5.3)
Body Mass Index†	
Median (range)	29.1 (20.2-47.9)
≥30 to <40 — no./total no. (%)	11/95 (11.6)
≥40 — no./total no. (%)	9/95 (9.5)
Risk factors for severe COVID-19 –no. (%)‡	81 (85.3)
Emergency Room Visit or Inpatient admission –no. (%)	2 (2.1)

* Race or ethnic group was reported by the patients and confirmed through review of the electronic health record.

† The body-mass index is the weight in kilograms divided by the square of the height in meters.

‡ Risk factors included an age of 65 years or older, a body-mass index of 35 or greater, or at least one coexisting illness.

DISCUSSION

- In this observational study of a large cohort of medically complex and racially diverse patients within a congregate setting, LY-CoV555 administration was safe and the number of patients requiring higher level of care evaluation was lower than anticipated suggesting a possible therapeutic effect of neutralizing antibody.

- More studies are needed on the large-scale implementation of LY-CoV555 administration in diverse patient populations, however this study proposes one method of accomplishing this task in medically complex cohort.