VA Cooperative Studies Program Epidemiology Analytics Resource (CSPEAR)

Use of COVID-19 Convalescent Plasma Therapy in the VA Health Care System

May 2021

Fact Sheet: Data on Veterans Using VA Health Care

CSPEAR provides timely epidemiologic information on VA health care users. This fact sheet presents summary data to inform a broad community of VA leaders, investigators, and clinicians as they consider how best to address the needs of Veterans.

Introduction

Convalescent plasma (CP) is a promising treatment for coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).[1] In Apr 2020, the Veterans Health Administration (VHA) began providing access to CP to hospitalized patients with—or at risk of progressing to—severe or life-threatening COVID-19, under the Mayo Clinic Expanded Access Program (EAP).[2] An emergency use authorization (EUA) was issued on Aug 23, 2020. Under EUA, health care providers may give CP treatment to hospitalized patients with COVID-19 based on an individual assessment of potential for risk and benefit.[3] COVID-19 treatment continues to evolve as new science emerges and treatments are approved. This fact sheet presents data on the changes over time in the use of CP therapy to treat COVID-19 within VHA.

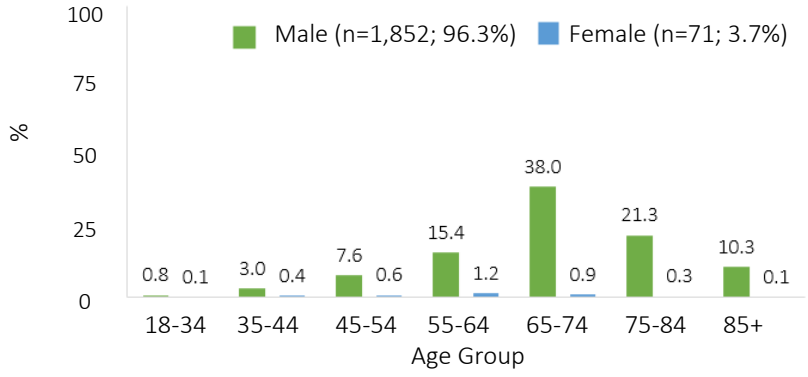
Methods

Population: Veterans hospitalized at a VA medical center who tested positive for SARS-CoV-2 infection and were treated with COVID-19 CP between Apr 15 and Nov 17, 2020. **Data Sources:** Clinical data from the VA Corporate Data Warehouse; COVID-19 data from the VA COVID-19 Shared Data Resource;[4] CP recipients from Mayo Clinic EAP and VA Pathology & Laboratory Medicine Service. **Analyses:** Patient characteristics are summarized using descriptive statistics. The population is stratified into 5 groups based on the time period when CP treatment was initiated. The results focus on the trends in CP treatment rates, severity of illness at treatment initiation, and the timing of treatment initiation. Figures comparing severe and non-severe CP patients assess severity at time of treatment initiation. **Notes:** This work was conducted under the CSP #2030 study protocol (VA CIRB: E20-10). This material is the result of work supported with resources and the use of facilities at the VA Cooperative Studies Program Epidemiology Centers in Seattle, WA and Boston, MA. The contents do not represent the views of VA or the US Government.

Fast Facts

- A total of 1,923 Veterans initiated CP treatment at a VA medical center (VAMC) between Apr 15, 2020 and Nov 17, 2020.
- Use of CP in VA has shifted over time, with an upward trend in administering the treatment early in the disease course and to less severe patients.
- Early in the pandemic, 46.2% of CP recipients were non-severe at the time of transfusion. By Oct-Nov 2020, this percentage increased to 86.2%.
- CP transfusions occurring within 0-2 days of admission increased from 32.6% to 72.6% between the first and last time periods.
- The CP treatment rate increased sharply in the Southeast in the late EUA period. In the Continental region, it peaked in the mid EAP period. Rates remained fairly stable over time in the Northeast and Pacific regions.
- Across all time points, CP treatment rates generally increased for 30.8% of VAMCs and decreased for 19.2%. Of the 52 VAMCs treating at least 10 CP patients, 65.4% had a jump in CP therapy under EUA (between 08/23-10/01 and 10/02-11/17 of 2020).

Age and Sex of CP Recipients (N=1,923)



Percent of SARS-CoV-2-Positive Inpatients who Initiated CP Treatment

Time Period (MM/DD) Year: 2020	n(%)
Early EAP (04/15-05/27)	178 (9.3%)
Mid EAP (05/28-07/09)	307 (16.0%)
Late EAP (07/10-08/22)	571 (29.7%)
Early EUA (08/23-10/01)	297 (15.4%)
Late EUA (10/02-11/17)	570 (29.6%)
Total	1,923 (100%)

Visit CSPEAR's website or contact CSPEAR@va.gov for more information.

Suggested citation: VA Cooperative Studies Program Epidemiology Analytics Resource. *Use of COVID-19 Convalescent Plasma Therapy in the Department of Veterans Affairs Health Care System.* Cooperative Studies Program, Office of Research and Development, Department of Veterans Affairs (VA). 2021.

U.S. Department of Veterans Affairs
Veterans Health Administration
Cooperative Studies Program

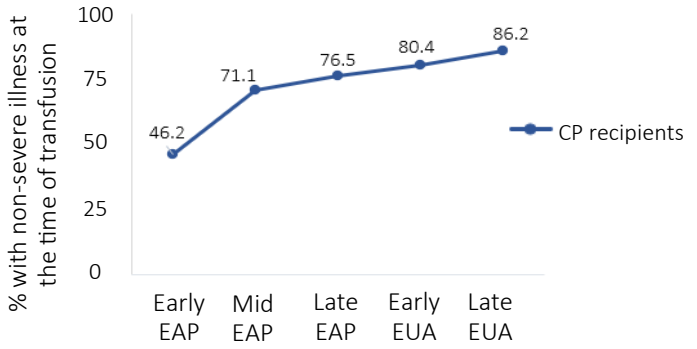
Disease Severity and Timing of Treatment

Research suggests CP therapy may be most effective in patients with non-severe COVID-19 soon after disease onset.[3] The antiviral effects should work best in the initial viral phase, which peaks during the first week of SARS-CoV-2 infection.

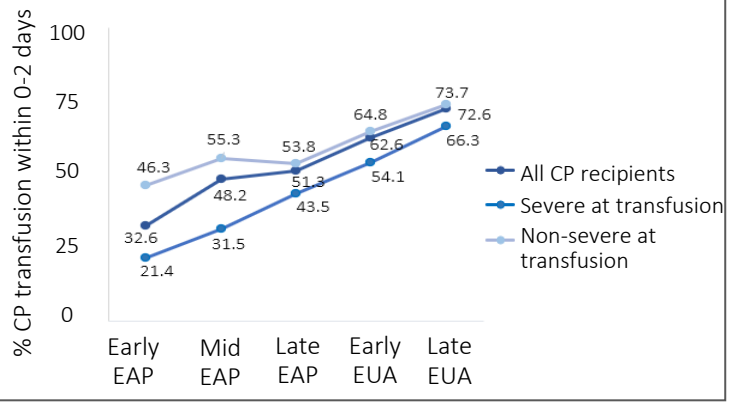
The VA COVID-19 Severity Scale was used to measure disease severity.[5] Severe illness is defined as receipt of high-flow oxygen, mechanical ventilation, intubation, dialysis, vasoactive or inotropic infusion, or extracorporeal membrane oxygenation.

Data show that, over time, VA increasingly gave CP to non-severe patients in the early days of their hospital stay.

Percent of CP Recipients with Non-Severe COVID-19 at the Time of Transfusion



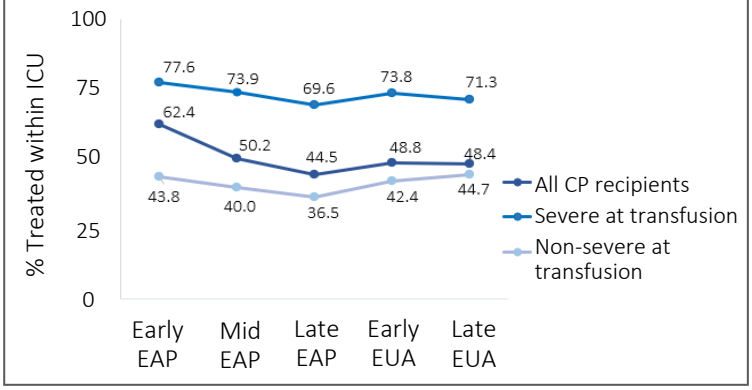
Percent of CP Patients Treated Early (Within 0-2 Days of Hospitalization)



Median Number of Days from Admission to CP Transfusion

Time Period	COVID-19 Severity at Time of Transfusion in CP Recipients Median days (interquartile range, Q1, Q3)		
	Severe (n=469)	Non-severe (n=1,454)	All (n=1,923)
Early EAP	7.0 (3.2, 14.0)	3.0 (1.0, 6.0)	5.0 (2.0, 9.0)
Mid EAP	3.0 (2.0, 5.0)	2.0 (1.0, 4.0)	3.0 (1.0, 4.0)
Late EAP	3.0 (2.0, 5.0)	2.0 (1.0, 4.0)	2.0 (1.0, 4.0)
Early EUA	2.0 (1.0, 5.0)	2.0 (1.0, 3.2)	2.0 (1.0, 4.0)
Late EUA	2.0 (1.0, 3.0)	1.0 (1.0, 3.0)	1.0 (1.0, 3.0)

Percent of CP Patients Treated within the Intensive Care Unit (ICU)



Patterns of CP Treatment at VA Medical Centers Treating Over 10 Patients with CP

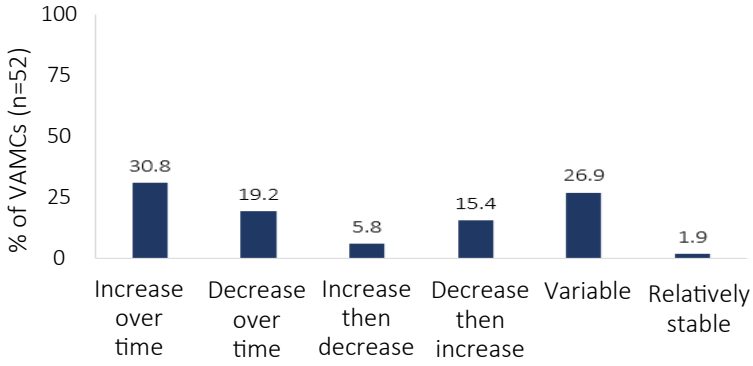
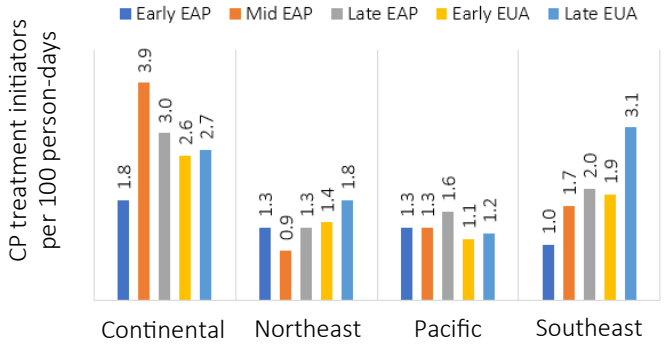


Figure shows patterns in CP treatment rates within individual VAMCs across all periods. A change of ±>5% from one period to the next qualified as an increase or decrease.

CP Treatment Rate Over Time, by Region



$$\text{CP treatment rate} = \frac{\text{No. of patients who initiated CP}}{\text{No. of days from admission until the earliest CP treatment, death, or discharge}}$$

References and Resources

1. Rojas M, et al. Convalescent plasma in COVID-19: Possible mechanisms of action. *Autoimmun Rev*. 2020. 19(7): p. 102554.
2. Mayo Clinic Expanded Access Program https://www.uscovidplasma.org/
3. FDA Issues EUA for Convalescent Plasma as Potential Promising COVID–19 Treatment, Another Achievement in Administration's Fight Against Pandemic. https://www.fda.gov/news-events/press-announcements/fda-issues-emergency-use-authorization-convalescent-plasma-potential-promising-covid-19-treatment
4. VA COVID-19 Shared Data Resource https://vhacdwdwhweb100.vha.med.va.gov/phenotype/index.php/COVID-19:Shared_Data_Resource (link is internal to VA)
5. VA COVID Severity Scale: https://phenomics.va.ornl.gov/web/cipher/phenotype-viewer?uqid=f957a03bc49d4572b07a2fa0623f8667&name=Veterans_Affairs_Severity_Index_for_COVID-19_-__MVP_

Visit https://www.research.va.gov/va-research-covid-19.cfm for information about VA research on COVID-19.

CSPEAR thanks the VA Mayo Clinic EAP providers for their commitment to delivering high-quality care to the Veterans we serve.