

**AWARD NUMBER: W81XWH-21-1-0064**

**TITLE:** Phase 2 Randomized Study of Convalescent Plasma from Recovered COVID-19 Donors Collected by Plasmapheresis as Treatment for Subjects with Early COVID-19 Infection

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**PREPARED FOR: U.S. Army Medical Research and Development Command  
Fort Detrick, Maryland 21702-5012**

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# REPORT DOCUMENTATION PAGE

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<b>13. SUPPLEMENTARY NOTES</b>					
<b>14. ABSTRACT</b>  The novel coronavirus, SARS-CoV-2, is currently causing a worldwide pandemic with over 8,979,539 cases as of June 22nd, 2020. There is currently no therapy for SARS-CoV-2, and the need for therapeutic options is urgent. The virus appears to cause multiorgan failure through several mechanisms, including a severe inflammatory response leading to acute respiratory distress syndrome. We are currently accruing patients on study under our IND 19824 of hospitalized patients with COVID-19 infections. With 47/55 patients accrued on this study, we have found that most patients (87%) are showing anti-SARS-CoV2 titer 1:100 by the time of plasma request as very few patients are hospitalized during their first week of symptoms. Conceptually, the use of convalescent plasma is to prevent further viral invasion pending adaptive immunity. Early viral neutralization may prevent the ensuing inflammatory and coagulation cascade. The purpose of this phase 2 one-year trial is to intervene in the early phase of viral infection (within 96 hours of first symptoms) to prevent hospitalization and mortality in the high-risk population.					
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## 1. INTRODUCTION:

This is a phase II randomized study of convalescent plasma for the treatment of non-immune individuals with COVID-19 infection at high risk of complications. Subjects will be randomized to receiving convalescent plasma or best supportive care. Patients randomized to best supportive care may receive plasma should they require hospitalization for progression of COVID-19 disease. The purpose of this trial is to intervene in the early phase of viral infection to prevent hospitalization and mortality in the high-risk population.

## 2. KEYWORDS:

COVID-19, Convalescent Plasma, Coronavirus, SARS-CoV-2

## 3. ACCOMPLISHMENTS:

**What were the major goals of the project?**

1. Screen and evaluate recovered persons with a history of documented COVID-19 infections for potential high-titer convalescent plasma donation. Determine their suitability, eligibility for donation, as well as anti-spike protein titers  $>1:1000$ .
  - First 51 donors (Note: Donors can be selected from HMH's active protocol - IND 19824. HMH already had such donors identified. As of June 22, 2020, HMH already has frozen plasma for the first 20 patients.) which is what would be needed for the first 4-6 months
  - Next 102 donors, 6-12 months
  - Final 153 donors, 12-18 months
  - Fewer donors may be needed, as a single donor may donate multiple times and the products may be frozen for future use.
2. Conduct a Phase 2 clinical trial involving early-stage COVID-19 patients with at least one risk factor who receive convalescent plasma therapy at the level specified in Aim 1.
  - Recruit first 102 patients (incl. controls), 6-9 months
  - Recruit next 204 patients (incl. controls), 9-12 months
  - Recruit final 306 patients (incl. controls), 12-18 months
3. Determine the clinical outcome of the patients on the convalescent plasma vs the control group. The primary endpoint is hospitalization.
  - First cohort data analysis, 12 months
  - Second cohort analysis, 15 months
  - Third cohort analysis, 21 months
  - Complete analysis of all secondary and exploratory endpoints, 24 months
  - Hospitalization rate for recipients of convalescent plasma therapy determined compared to the hospitalization rate of non-recipients (controls), 24 months

**What was accomplished under these goals?**

1. Donor screening: 459 Donors Screened
2. Patients with Covid-19 infections: 21 patients were enrolled in the study, 10 received convalescent plasma and 11 were randomized to the control arm.
3. 3/11 patients on the control group have required admission in contrast with 0/10 patients on the convalescent plasma arm.

**What opportunities for training and professional development has the project provided?**

Nothing to Report

**How were the results disseminated to communities of interest?**

Nothing to Report

**What do you plan to do during the next reporting period to accomplish the goals?**

As it is now apparent that convalescent plasma technology has been replaced by antivirals and monoclonal antibodies. Because of this, the study has not been able to successfully accrue. Therefore, the study is in the process of closing.

#### **4. IMPACT:**

**What was the impact on the development of the principal discipline(s) of the project?**

Nothing to Report.

**What was the impact on other disciplines?**

Nothing to Report.

**What was the impact on technology transfer?**

Nothing to Report.

**What was the impact on society beyond science and technology?**

Nothing to Report.

**5. CHANGES/PROBLEMS:**

The biggest challenge has been patient recruitment. No patients have been enrolled since the last quarterly report. We have reached out to the community, and the medical staff throughout the Hackensack Meridian Health System.

**Actual or anticipated problems or delays and actions or plans to resolve them**

As vaccination rates increased and infections decrease, patient recruitment became difficult.

**Changes that had a significant impact on expenditures**

Convalescent plasma technology has been replaced by antivirals and monoclonal antibodies. Because of this, the study has not been able to successfully accrue. Therefore, the study is in the process of closing.

**Significant changes in use or care of human subjects, vertebrate animals, biohazards, and/or select agents**

**Significant changes in use or care of human subjects**

Not significant deviations, unexpected outcomes or changes in approved protocols.

**Significant changes in use or care of vertebrate animals**

Not Applicable

**Significant changes in use of biohazards and/or select agents**

Nothing to Report

**6. PRODUCTS:**

- **Publications, conference papers, and presentations**

**Journal publications.**

Nothing to Report

**Books or other non-periodical, one-time publications.**

Nothing to Report

**Other publications, conference papers and presentations.**

Nothing to Report

- **Website(s) or other Internet site(s)**

<https://clinicaltrials.gov/ct2/show/NCT04456413>

- **Technologies or techniques**

Nothing to Report

- **Inventions, patent applications, and/or licenses**

Nothing to Report

- **Other Products**

Nothing to Report

## 7. PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS

### What individuals have worked on the project?

Name: Michele Donato, MD  
Project Role: Principal Investigator  
Researcher Identifier (e.g. ORCID ID):  
Nearest person month worked: 1.0 Month (For Year)  
Contribution to Project: Dr. Donato is responsible for the overall scientific, clinical, and technical direction of the proposed work in this submission.

Name: David Perlin, PhD  
Project Role: Co-Investigator  
Researcher Identifier (e.g. ORCID ID):  
Nearest person month worked: 0.64 Month (For Year)  
Contribution to Project: Dr. Perlin is responsible for the overall execution and delivery of the antibody screening and validation program.

Name: Laura Long  
Project Role: Nurse Manager  
Researcher Identifier (e.g. ORCID ID):  
Nearest person month worked: 3.0 Month (For Year)  
Contribution to Project: Laura is responsible for the administrative management of the clinical team, training and documentation of all engaged team members, and overall quality control of compliance with local, state, and federal regulations pertaining to clinical trial conduct.

Name: Tauqir Huk  
Project Role: Project Manager  
Researcher Identifier (e.g. ORCID ID):  
Nearest person month worked: 9.0 Months (For Year)  
Contribution to Project: Tauqir is responsible for the administrative coordination of all study activities in support of the clinical research nurses.

Name: Michal Cwalina  
Project Role: Research Data Coordinator  
Researcher Identifier (e.g. ORCID ID):  
Nearest person month worked: 9.0 Months (For Year)  
Contribution to Project: Michal is responsible for the abstraction and collection/reporting of all study data according to the prescribed timelines

**Has there been a change in the active other support of the PD/PI(s) or senior/key personnel since the last reporting period?**

Nothing to Report

**What other organizations were involved as partners?**

Nothing to Report

**8. SPECIAL REPORTING REQUIREMENTS**

**COLLABORATIVE AWARDS:**

**QUAD CHARTS:**

**9. APPENDICES:**