



April 14th, 2020

Agenda

Convalescent Plasma for COVID-19

- Case Discussions
- Open Discussion



Convalescent Plasma

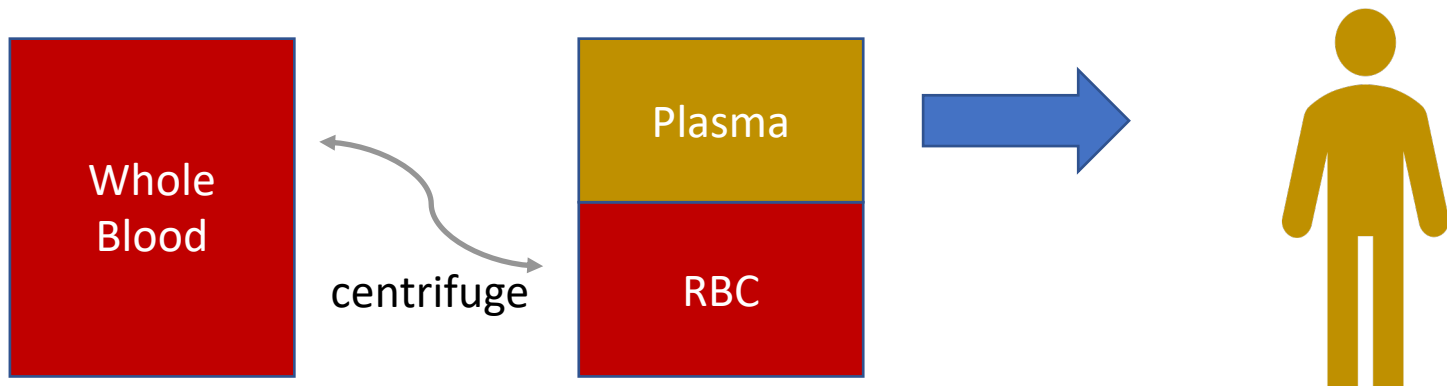
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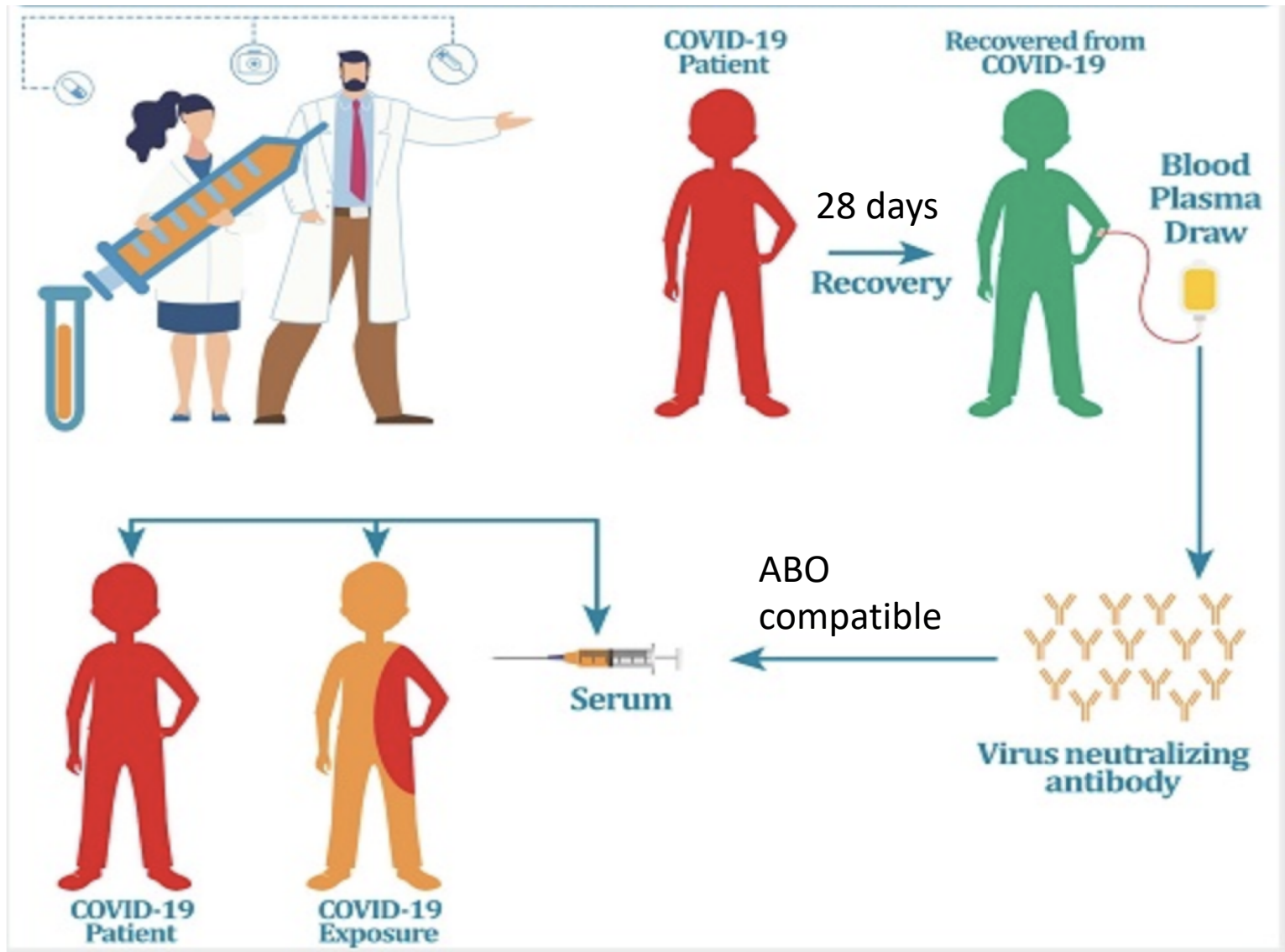
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What is convalescent plasma?

- Convalescent plasma is the liquid part of blood that is collected from patients who have recovered from an infection.
- Antibodies present in convalescent plasma are proteins that might help fight the infection



Convalescent Plasma as therapy



Is it effective against COVID?

- Unknown!
- Plasma transfusions are relatively safe
 - Allergic reactions can happen
- Anecdotal evidence that Convalescent plasma might be effective
- has been studied in outbreaks of other respiratory infections, including the 2003 SARS-CoV-1 epidemic, the 2009-2010 H1N1 influenza virus pandemic, and the 2012 MERS-CoV epidemic.



How does it work?

- Antibody can bind to given pathogen (e.g. virus)
 - Neutralizing its infectivity
- Complement activation
- Antibody dependent cellular cytotoxicity and/or phagocytosis
- Short-term strategy to confer immediate immunity
- Pooled IVIG will eventually be available

Bloch EM, *J Clin*

Invest. 2020 <https://doi.org/10.1172/JCI138745>.



JAMA | Preliminary Communication

Treatment of 5 Critically Ill Patients With COVID-19 With Convalescent Plasma

Chenguang Shen, PhD; Zhaoqin Wang, PhD; Fang Zhao, PhD; Yang Yang, MD; Jinxiu Li, MD; Jing Yuan, MD; Fuxiang Wang, MD; Delin Li, PhD; Minghui Yang, PhD; Li Xing, MM; Jinli Wei, MM; Haixia Xiao, PhD; Yan Yang, MM; Jiuxin Qu, MD; Ling Qing, MM; Li Chen, MD; Zhixiang Xu, MM; Ling Peng, MM; Yanjie Li, MM; Haixia Zheng, MM; Feng Chen, MM; Kun Huang, MM; Yujing Jiang, MM; Dongjing Liu, MD; Zheng Zhang, MD; Yingxia Liu, MD; Lei Liu, MD

Key Points

Findings In this uncontrolled case series of 5 critically ill patients with COVID-19 and acute respiratory distress syndrome (ARDS), administration of convalescent plasma containing neutralizing antibody was followed by an improvement in clinical status.



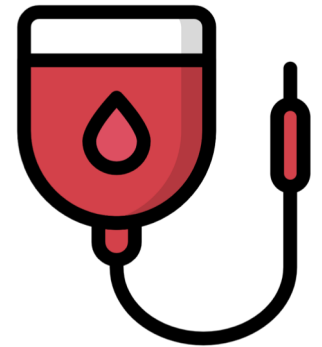
How do we get it?

Clinical Trial

Expanded Access

E-IND

- A physician should contact their local blood center to inquire about obtaining convalescent plasma from a recovered donor.
- Licensed physicians can request the use of convalescent plasma through a single-patient Emergency Investigational New Drug (eIND).



<https://www.fda.gov/vaccines-blood-biologics/investigational-new-drug-ind-or-device-exemption-ide-process-cber/recommendations-investigational-covid-19-convalescent-plasma>



Which populations?

- Laboratory confirmed COVID-19
- Severe or immediately life-threatening COVID-19:
 - shortness of breath (dyspnea),
 - respiratory frequency $\geq 30/\text{min}$,
 - blood oxygen saturation $\leq 93\%$,
 - partial pressure of arterial oxygen to fraction of inspired oxygen ratio < 300 ,
 - lung infiltrates $> 50\%$ within 24 to 48 hours
- Life-threatening disease is defined as one or more of the following:
 - respiratory failure,
 - septic shock,
 - multiple organ dysfunction or failure
- Informed consent provided by the patient or healthcare proxy.

<https://www.fda.gov/vaccines-blood-biologics/investigational-new-drug-ind-or-device-exemption-ide-process-cber/recommendations-investigational-covid-19-convalescent-plasma>



Risks

- Serum sickness
- Hypersensitivity
- Acquisition of Infection (RARE)
- Transfusion-related acute lung injury (TRALI)
- Attenuates the immune response



Helpful resources

Expanded Access for Convalescent Plasma:

<https://clinicaltrials.gov/ct2/show/NCT04338360>

FDA guidance:

<https://www.fda.gov/vaccines-blood-biologics/investigational-new-drug-ind-or-device-exemption-ide-process-cber/recommendations-investigational-covid-19-convalescent-plasma>

RED CROSS:

<https://www.redcrossblood.org/donate-blood/dlp/plasma-donations-from-recovered-covid-19-patients.html>

COVID-19 information

<https://covid.idea.medicine.uw.edu/>

