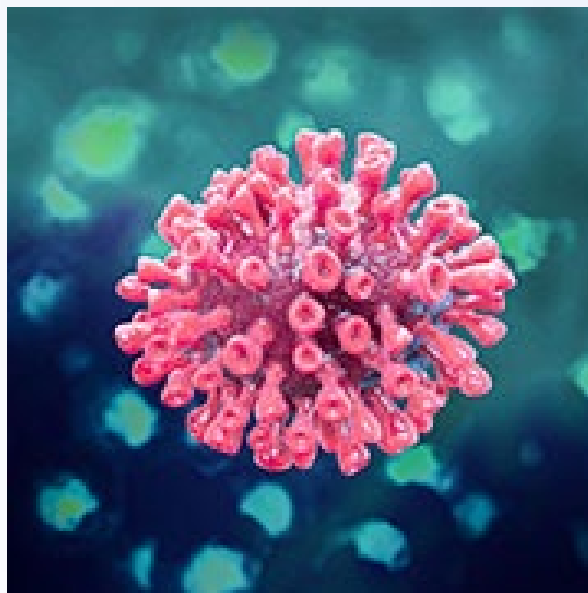




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Convalescent plasma as a potential therapy for COVID-19



The outbreak of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which originated in Wuhan, China, has become a major concern all over the world. The pneumonia induced by the SARS-CoV-2

associated with a lower viral load and reduced mortality within 5 days of symptom onset.⁸ A meta-analysis by Mair-Jenkins and colleagues showed that the mortality was reduced after receiving various doses of convalescent

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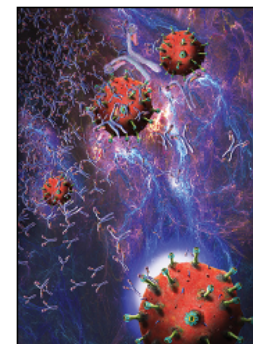
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The resurgence of convalescent plasma therapy

The global pandemic of severe acute respiratory coronavirus 2 (SARS-CoV-2), which causes coronavirus disease 2019 (COVID-19), continues to spread around the world, having infected more than 1.8 million people and causing over 100 000 deaths as of April 13, 2020. High-quality evidence showing the effectiveness of treatments for COVID-19 is scarce, but over 400 studies are now registered in ClinicalTrials.gov testing a range of therapies, including immunosuppressants and the anti-

respiratory symptoms, in some cases within 1–3 days of treatment. The US Food and Drug Administration (FDA) has approved the use of convalescent plasma under compassionate use rules, but randomised controlled trials are now needed to provide clinical evidence. Three trials initiated by the US National COVID-19 Convalescent Plasma Project are currently being evaluated by the FDA to test the activity and safety of convalescent plasma in three groups of patients: people

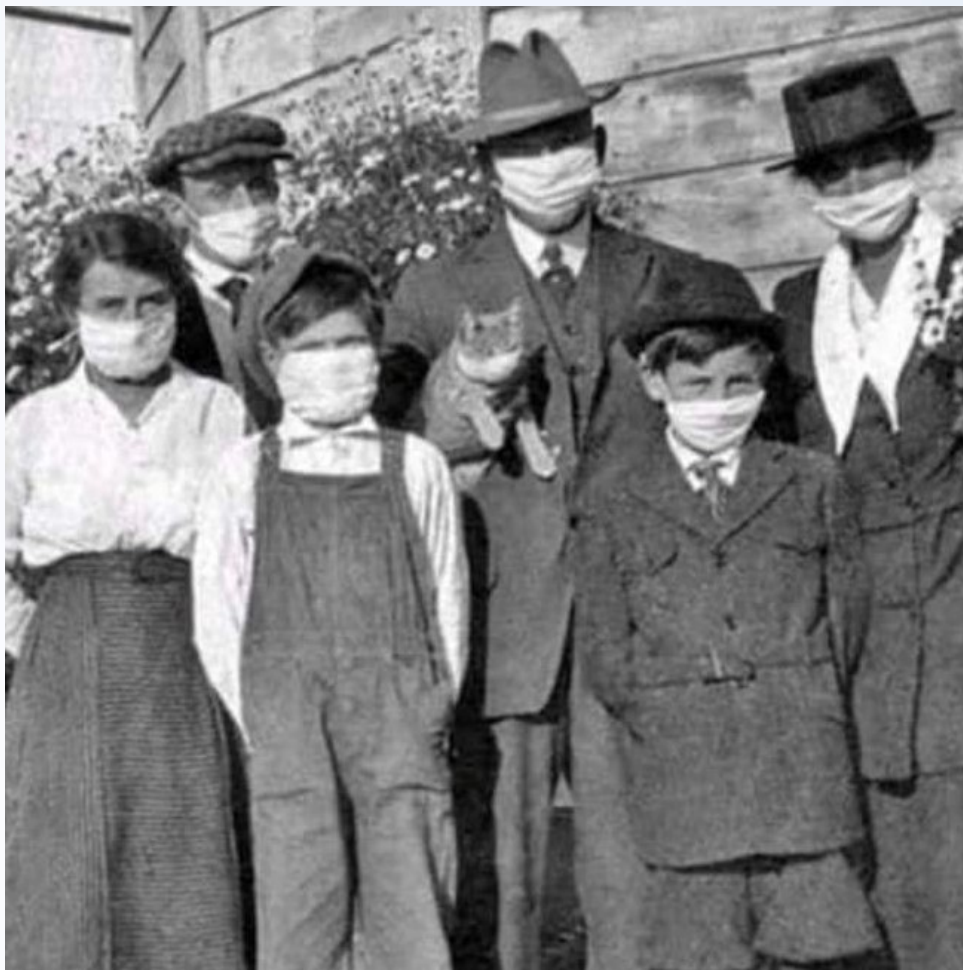


Convalescent serum lines up as first-choice treatment for coronavirus

Antibodies from blood donated by people who recovered from the illness and hyper-immunoglobulins are becoming treatments of choice for COVID-19, with recombinant polyclonal antibody approaches to follow.

Cormac Sheridan









The Effectiveness of Convalescent Plasma and Hyperimmune Immunoglobulin for the Treatment of Severe Acute Respiratory Infections of Viral Etiology: A Systematic Review and Exploratory Meta-analysis

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Background. Administration of convalescent plasma, serum, or hyperimmune immunoglobulin may be of clinical benefit for treatment of severe acute respiratory infections (SARIs) of viral etiology. We conducted a systematic review and exploratory meta-analysis to assess the overall evidence.

Methods. Healthcare databases and sources of grey literature were searched in July 2013. All records were screened against the protocol eligibility criteria, using a 3-stage process. Data extraction and risk of bias assessments were undertaken.

Results. We identified 32 studies of SARS coronavirus infection and severe influenza. Narrative analyses revealed consistent evidence for a reduction in mortality, especially when convalescent plasma is administered early after symptom onset. Exploratory post hoc meta-analysis showed a statistically significant reduction in the pooled odds of mortality following treatment, compared with placebo or no therapy (odds ratio, 0.25; 95% confidence interval, .14–.45; $I^2 = 0\%$). Studies were commonly of low or very low quality, lacked control groups, and at moderate or high risk of bias. Sources of clinical and methodological heterogeneity were identified.

Conclusions. Convalescent plasma may reduce mortality and appears safe. This therapy should be studied within the context of a well-designed clinical trial or other formal evaluation, including for treatment of Middle East respiratory syndrome coronavirus CoV infection.

**Use of Convalescent Whole Blood or Plasma
Collected from Patients Recovered from Ebola Virus
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during Outbreaks**

**Interim Guidance for National Health Authorities and Blood
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Handbook of COVID-19 Prevention and Treatment

*The First Affiliated Hospital, Zhejiang University School of Medicine
Compiled According to Clinical Experience*



NEWS

Covid-19: FDA approves use of convalescent plasma to treat critically ill patients

Janice Hopkins Tanne

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

RESULTS All 5 patients (age range, 36-65 years; 2 women) were receiving mechanical ventilation at the time of treatment and all had received antiviral agents and methylprednisolone. Following plasma transfusion, body temperature normalized within 3 days in 4 of 5 patients, the SOFA score decreased, and PAO_2/FIO_2 increased within 12 days (range, 172-276 before and 284-366 after). Viral loads also decreased and became negative within 12 days after the transfusion, and SARS-CoV-2-specific ELISA and neutralizing antibody titers increased following the transfusion (range, 40-60 before and 80-320 on day 7). ARDS resolved in 4 patients at 12 days after transfusion, and 3 patients were weaned from mechanical ventilation within 2 weeks of treatment. Of the 5 patients, 3 have been discharged from the hospital (length of stay: 53, 51, and 55 days), and 2 are in stable condition at 37 days after transfusion.

CONCLUSIONS AND RELEVANCE In this preliminary uncontrolled case series of 5 critically ill patients with COVID-19 and ARDS, administration of convalescent plasma containing neutralizing antibody was followed by improvement in their clinical status. The limited sample size and study design preclude a definitive statement about the potential effectiveness of this treatment, and these observations require evaluation in clinical trials.