

Convalescent plasma therapy

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Source: *The Hindu*

Manifest pedagogy: In the pursuit of mitigating the spread of and fatality due to COVID-19, the researchers, scientists and doctors are on war footing. In that direction the convalescent plasma therapy has given some hope. This therapy and its effects have to be studied for mains. The technicalities are important for prelims.

In news: The Indian Council of Medical Research (ICMR) has given nod to Kerala to conduct convalescent plasma therapy (CPT) against COVID-19.

Placing it in syllabus: COVID-19 pandemic

Dimensions:

- What is it?
- Its history in treating other pandemics
- ICMR's take on it

Content:

CPT:

- The **idea behind this therapy** is that immunity can be transferred from a healthy person to a sick person using convalescent plasma.
- Now in plasma therapy, about 800 ml of **blood is extracted from a fully recovered coronavirus patient to isolate plasma rich with antibodies.**
- This plasma is then **infused into the bloodstream of other coronavirus patients.**
- When the body gets into contact with **external pathogens** like bacteria or germs, it automatically triggers a **defence mechanism, releasing antibodies.**

- According to research, immunity develops early in asymptomatic or persons with mild symptoms, while it develops later in severe and critically-ill COVID 19 patients.



A research in China found the therapy effective in treating coronavirus patients. The research found that plasma infused in 10 adult patients with severe symptoms in Wuhan, China was well-tolerated and could significantly increase or maintain neutralizing antibodies at a high level.

Positive results from China encouraged other countries including the US to test the effectiveness of the therapy against COVID-19.

According to a Journal of the American Medical Association (JAMA) study, CPT has led to “an improvement in clinical status” of five critically-ill patients with coronavirus and ARDS (acute respiratory distress syndrome) in the US.

South Korea and the UK are also experimenting with CPT.

Its history in treating other pandemics:

- CPT is a **classic adaptive immunotherapy** which has been applied to the prevention and treatment of many infectious diseases for more than one century.
- Over the past two decades, CP therapy and similar treatment was **successfully used** during the **Spanish flu pandemic of 1918, a diphtheria outbreak in the 1920s, a flesh-eating bacteria epidemic in the 1930s, treatment of SARS, MERS, and 2009 H1N1 pandemic** with satisfactory efficacy and safety.
- A meta-analysis from 32 studies of SARS coronavirus infection and severe influenza showed a statistically significant reduction in mortality following CP therapy, compared with no therapy.

- It was **tried most recently for Ebola** but was unable to significantly improve the survival in it.
- Since the **virological and clinical characteristics share similarity among SARS, MERS and COVID-19**, now CP therapy is seen as a promising treatment option for COVID-19 rescue.

ICMR's take on it:

- **Kerala is the first state in the country to have been given the nod** to try CPT by ICMR, as a task force was already in place.
- **The Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST)** under the Department of Science and Technology has been given a go ahead on April 11, 2020 by ICMR.
- ICMR has **invited Letter of Intent (LoI) for participation in studies to validate Therapeutic Plasma Exchange (TPE)**, an experimental procedure to treat critically ill coronavirus patients.
- It has said that hospitals and institutions planning to provide CPT should do so in a clinical trial with **protocols which are cleared by the Institutional Ethics Committee (IEC)**.
- They **must also be registered with the Clinical Trial Registry of India (CTRI) and get approval from the Drugs Controller General of India (DCGI)** before initiating the trial.
- Patients will either be given convalescent plasma or any conventional therapy on a randomised-basis and each of the **patients will know which treatment they are being given**.
- **ICMR has clarified that it does not recommend this as a treatment option outside of clinical trials at the moment**, though patients admitted for care at coronavirus management facilities will be eligible for inclusion in the trial.

