



Journal Homepage: - [www.journalijar.com](http://www.journalijar.com)

## INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/10968

DOI URL: <http://dx.doi.org/10.21474/IJAR01/10968>



### RESEARCH ARTICLE

#### TREATMENT OF COVID 19 PATIENT WITH CONVALESCENT PLASMA

Dr. Rajshree Behra M.D<sup>1</sup> and Dr. Yogi Raj Joshi M.D<sup>2</sup>

1. Professor, Department of Immunohaematology and Transfusion Medicine, Dr S N Medical College Jodhpur.
2. Associate Professor, Department of Pathology, Dr S N Medical College, Jodhpur.

#### Manuscript Info

##### Manuscript History

Received: 12 March 2020

Final Accepted: 14 April 2020

Published: May 2020

#### Abstract

Copy Right, IJAR, 2020,. All rights reserved.

#### Introduction:-

Covid-19 is highly infectious disease caused by a new virus. This virus was initially detected in Wuhan, China in Dec. 2019. A cluster of pneumonia patients manifesting as fever, cough and dyspnea with unknown etiology emerged at that time.<sup>1-3</sup>

It spreads when a person touches a surface or objects that has the virus on it, and then touches their eyes, nose or mouth.

As we all know there is no specific treatment of Covid-19. At the moment, therapeutic strategy for Covid-19 is largely supportive.<sup>4</sup> Several off-label anti-viral and Anti HIV agents seen to be clinical beneficial, but their efficacy is far from satisfactory.<sup>5</sup> To this end, there are urgent needs to develop Covid-19 specific treatment to alleviate the symptoms and reduce the mortality. Previous experience with SARS suggested that convalescent plasma exhibits a neutralizing antibody response directed against the viral S protein. This antibody blocks SARS-CoV-ACE2 entry and can be detected even 24 months after infection<sup>6</sup>.

According to the experience of SARS and severe influenza, Convalescent plasma is recommended to use as early as possible because the production of endogenous IgM and IgG antibodies peaks at two weeks and four weeks after infection respectively.<sup>7-8</sup>

Convalescent Plasma (C.P.) is Plasma prepared from people who recovered from Covid-19 have antibodies to the disease in their blood. It can be given to Covid 19 patient who are critically ill having (i) dyspnoea, (ii) respiratory frequency more than 30/minute (iii) Blood oxygen saturation < 93% and (iv) Lung infiltrate more than 50% within 24 to 48 hours.<sup>9</sup>

The eligibility criteria for donating Convalescent Plasmas are: (i) Donor should be positive for Covid-19 at the time of illness, or a positive test for SARS-Cov2 antibodies after recovery if prior diagnostic test not performed at the time Covid-19 was suspected. (ii) Complete resolution of symptoms 14-28 days prior to donation. (iii) Negative for HIV, HBsAg, HCV, Syphilis & Malaria. (iv) Donor should fulfill all the fitness criteria of Blood Donation. (v) Donor protein level should also be checked.

After fulfilling all these criteria donors consent should be taken than Convalescent Plasma is collected by plasmapheresis technique. This procedure is done by Licensed Blood Bank for Plasmapheresis. By this procedure

**Corresponding Author:- Dr Yogi Raj Joshi MD**

Address:- 220, Bachh Raj Ji Ka Bagh 12<sup>th</sup> Residency Road Jodhpur.

400ml Plasma is collected from the Donor and remaining blood components reinfused in the Donor. This 400 ml Plasma is used for 2 patients as one patient require only 200ml. Studies showed that only one unit was required and patient recovered. No second unit was demanded. Again it is emphasized that this treatment should be given to life threatening patient of Covid-19.

The ethical committee approval is mandatory before using convalescent Plasma to Covid 19 patients.

**References:-**

1. Huang C, Wang Y, Lix et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China, *Lancet* 2020; 395 (10223): 497-506.
2. Zhou F, Yu T, Du R, et al. clinical cause and risk factors for mortality of adult inpatients with Covid-19 in Wuhan China, a retrospective Cohort study. *Lancet* 2020. DOI : 10.1016/S0140-6736(20) 30566-3.
3. Guan WJ, Ni Zy, Hu Y et al, Clinical characteristic of Coronavirus disease 2019 in China. *N. Eng. J. Med.* 2020 DOI : 10.1056/NEJMao 2002032.
4. Matthay MA, Aldrich JM, Gotts JE. Treatment for severe acute respiratory distress syndrome from Covid-19. *Lancet Respir Med* 2020. DOI : 10.1016/S2213-2600(20)30127-2
5. Kalil AC. Treating Covid-19 off label Drug use, Compassionate use, and Randonized Clinical Trials During Pandemics. *JAMA* 2020. DOI : 10.1001/Jana. 2020. 4742.
6. Liu W, Fontanct A, Zhang PH et al. Two year prospective study of the humoral immune response of patients with severe acute respiratory syndrome. *J Infect Dis* 2006; 193(6) : 792
7. Soo Yo, cheng Y, Wong R et al, Retrospective comparison of convalescent plasma with continuing high – dose methylprednisolone treatment in SARS patients. *Clin Microbiol Infect.* 2004; 10(7): 676-8.
8. Luke TC, Kifbane EM, Jackson JL, Hoffmen SL, Meta-analysis: Convalescent blood production for Spanish influenza pricumonia: a future H5Ni treatment? *Ann InternMed* 2006; 145(8): 599-609.
9. Janice Hopkins Tanne : Covid-19: FDA approves use of convalescent plasma to treat critically ill patients: *BMJ* 2020; 368:m1256.