



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

Convalescent plasma transfusion for pregnant patients with COVID-19

We read with great interest the Correspondence by Roman Rodionov and colleagues¹ on the benefit of convalescent plasma transfusions for patients with impaired immune function due to B-cell depletion. Similarly to people who are immunocompromised, pregnant women are at a higher risk of infection with SARS-CoV-2² because pregnancy is a state of partial immune suppression that, along with the normal physiological changes in pulmonary function, makes pregnant women more susceptible to viral infections and to the clinical severity of pneumonia. Pregnant women, even with no additional risk factors, have approximately 40% fewer B and NK cells in peripheral blood than non-pregnant women,³ and a trend of lower lymphocyte counts has been observed in pregnant women infected with SARS-CoV-2.⁴ We herein report our experience with convalescent plasma administered to two pregnant patients (a 31-year-old Somali woman at 24 weeks of gestation, and a 26-year-old Italian woman at 34 weeks of gestation) in the early-intermediate stage of COVID-19, with evidence of multifocal, bilateral, ground-glass areas, mainly in the lower lobes on pulmonary CT scan. Neither had detectable IgG against SARS-CoV-2 at the time

of transfusion. At admission, both patients were hypoxic and received two units of convalescent plasma collected from an ABO-compatible donor who had recovered from COVID-19. The donor plasma had an anti-SARS-CoV-2 IgG titre of more than 1:1000 (endpoint dilution titre assayed by ELISA) and a neutralisation titre of more than 40:1000 (endpoint dilution titre). The first convalescent plasma unit was administered on the day of admission and the second unit on the following day, in addition to standard-of-care treatment. Both patients underwent daily blood tests and assessments of the safety and efficacy of convalescent plasma therapy, and developed detectable anti-SARS-CoV-2 IgG (assayed by SARS-CoV-2 ELITE MGB Kit in combination with ELITE InGenius, ELITech Group, Torino, Italy) 24 h after the first transfusion. The patients showed clinical recovery, defined as an improvement of 1 point or more on the WHO Clinical Progression Scale, and both later underwent vaginal delivery at term with no complications. After a review of the published literature in PubMed, we found only one case of a critically ill obstetric patient with COVID-19 and 11 reports of non-critically ill obstetric patients with COVID-19 treated with convalescent plasma.⁵ Some publications report encouraging results from the use of convalescent plasma in pregnant women, but others show conflicting results. We agree with the conclusions

of Rodionov and colleagues, and we hypothesise that, similarly to patients with a deficient B-cellular immune response, pregnant women with no detectable anti-SARS-CoV-2 IgG are potential candidates for treatment with convalescent plasma with high antibody titres in an early stage of the disease, accompanied by a close follow-up of the antibody titre as a predictive prognostic marker.

We declare no competing interests.

Copyright © 2021 The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY-NC-ND 4.0 license.

*Antonio Mastroianni,
Sonia Greco, Maria Vittoria Mauro,
Luciana Chidichimo, Valeria Vangeli
antoniomastroianni@yahoo.it

Infectious & Tropical Diseases Unit (AM, SG, LC, VV) and Microbiology & Virology Unit (MVM), Annunziata Hub Hospital, Azienda Ospedaliera di Cosenza, Cosenza, Italy

- 1 Rodionov RN, Biener A, Spieth P, et al. Potential benefit of convalescent plasma transfusions in immunocompromised patients with COVID-19. *Lancet Microbe* 2021; **2**: e138.
- 2 Hanna N, Hanna M, Sharma S. Is pregnancy an immunological contributor to severe or controlled COVID-19 disease? *Am J Reprod Immunol* 2020; **84**: e13317.
- 3 Araújo de Carvalho SJ, Virgilio GT, Dias SJ, et al. Evaluation of immunological parameters in pregnant women: low levels of B and NK cells. *Rev Bras Ginecol Obstet* 2019; **14**: 213–19.
- 4 Mohr-Sasson A, Chayo J, Bart Y, et al. Laboratory characteristics of pregnant compared to non-pregnant women infected with SARS-CoV-2. *Arch Gynecol Obstet* 2020; **302**: 629–34.
- 5 Jacobson J, Antony K, Beninati M, Alward W, Hoppe KK. Use of dexamethasone, remdesivir, convalescent plasma and prone positioning in the treatment of severe COVID-19 infection in pregnancy: a case report. *Case Rep Womens Health* 2021; **29**: e00273.



Published Online
June 2, 2021
[https://doi.org/10.1016/S2666-5247\(21\)00130-0](https://doi.org/10.1016/S2666-5247(21)00130-0)