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.

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Short Report

Convalescent blood plasma (CBP) donated by recovered COVID-19 patients – A comment

Th. Lung, B. Sakem, M. Risch, U. Nydegger *

Center for Laboratory Medicine Dr Risch, Vaduz, Principality of Liechtenstein, University of Bern, Switzerland

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Convalescere: a latin word for 'to recover' with linguistics reaching into current English - says it all: the revival of patients from COVID-19 infection to a healthy (virus-free?) life. [1,2]. Even after a poorly defined waiting period of one month, blood banks collect blood plasma during the dynamics of recovery: donor recruitment impossible without med lab assessment of fitness (Table 1) [3]. Whereas the safety of apheresis plasma donation was scrutinized during the development of this technique and persists to be acknowleged since inception, the safety procedures required for convalescent blood plasma (CBP) donation are questionable. [4].

The infant-Covid-19 group study [5,6] clearly showed that early administration of high-titer CBP can reduce progression of COVID-19. Ever since CBP was asserted with other infectious diseases than SARS-CoV 2, specific sets of lab assays were required to meet donation requirements; as of 2020, under the pressure of treating an ever increasing number of younger COVID 19 patients [7–9] we cannot remain inactive to apply simple procedures prior to CBP, this fresh-frozen semi- stable blood product remaining remote from pharmaceutical approaches as those seen for polyconal and/or monoclonal antibodies (abs) [10]. Pathogen inactivation is has now been achieved applying such methods as Amotosalen UVA which blocks DNA and RNA replication - this Intercept Blood System is used for blood plasma, without compromising anti SARS-CoV-2 activity [5]. Thus, the containment of anti-SARS-CoV 2 antibodies in CBP produced by the convalescing donor or added as spike, is more and more perceived as bringing therapeutic efficacy to some patients receiving CBP [11,12]. In addition, glycan constitution of the abs seems to confer virotoxicity: afucosylated IgG characterizes enveloped viral responses and correlates with COVID-19 severity [13].

The polyclonal machinery in humans which synthesizes abs can best be screened using a pan-immunoglobulin assay quantifying specificities towards receptor-binding domain of the SARS-CoV-2 S1-subunit of the spike protein [14] or assays based on PCR neutralization [15]. We have recently proposed that CBP contains as yet to be defined components different from anti-SARS-CoV-2 abs; one may underline this assumption adressing the GIS (geographic information system) approach forwarded by Topol et al. [16]. This can be completed with data-driven Bayesian networks estimated to uncover complex interrelationships and confounding effects [12,17]. Recovery from COVID-19, including expiration of SARS-CoV-2 load, may in fact depend on metabolome and proteome including different components from abs alone and scoop from multiple and superimposed layers of innate and acquired immune events; recovery also takes hold of such components as α1−antitrypsin, C1 esterase inhibitor, metalloproteinase or shed IL- receptors: their putative convalescing potential might get lost to the convalescing/-recovering COVID 19 patient. The involvement of the DNA ladder, here coding for ABO histo-blood groups and complement in COVID -19 just begins to be considered on a patients` chart [18,19]. The medicalized smartphone [20] software on a bracelet, programmed to clear a convalescent COVID-19 patient to qualify for plasma donation, may enable advance us to recruit sufficient CBP donors - should this treatment become part of good medical practice.

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* Corresponding author.
E-mail addresses: urs.nydegger@risch.ch, ursnydegger2@mac.com (U. Nydegger).

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Table 1
Proposed med lab tests within reference intervals to estimate fitness for donation of convalescent plasma.

clinical chemistry	hematology	immunology	microbiology
standard: CRP, ferritin, creatinine, LDH, ALT, CK, bilirubin	hb, RBC count, ABO histo-blood type	Ig levels (polyclonal, IgG,IgM, IgA, SARS-CoV-2 Ig titers), C5a, SC5b-9	regular blood donation tests (**)

High titered SARS-CoV levels (hyperimmune); different commercially available assays.
LDH lactate dehydrogenase.
ALT alanine aminotransferase.
CK creatine kinase.
** HIV, HCV, HBV, syphiliss.

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