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## LETTER TO THE EDITOR

### Convalescent fecal microbiota transplantation as a possible treatment for COVID-19



Given the global coronavirus disease (COVID-19) outbreak, an international group of experts in fecal microbiota transplantation (FMT) and stool banking believe that recommendations to update screening of stool donors are urgently needed, as the risk of transmitting severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) by FMT might be high [1].

The frequency of gastrointestinal (GI) symptoms, such as mild diarrhea, in patients infected with SARS-CoV-2 has been reported as over 50% of COVID-19 patients [2] and 61.1% in the North American population [3]; therefore, the GI tract may be an alternative route of infection. The mechanism may involve interaction between SARS-CoV-2 and ACE2-expressing enterocytes that could indirectly damage the digestive system through a chain of inflammatory responses, antibiotic-associated diarrhea, and immune regulation of the gut-lung axis [4].

In contrast, the use of monoclonal antibodies and hyperimmune plasma from convalescent patients has been proposed as a promising treatment option to prevent viral fusion/entry to target cells [5].

FMT is a widely used treatment method for correcting dysbiosis that is primarily caused by *Clostridioides difficile* [6]. Targeting gut microbiota may be a new therapeutic option or at least an adjuvant therapeutic choice for COVID-19 [7].

We suggest that FMT from convalescent patients might be as effective as transfusion of convalescent plasma for treatment of patients with severe COVID-19 exhibiting progressive respiratory failure and requiring mechanical ventilation due to acute respiratory distress syndrome (ARDS).

The potential protective and therapeutic benefits of convalescent FMT include inhibition of SARS-CoV-2 fusion/entry by specific antibodies of human origin like convalescent plasma infusion [7] and upregulation of immune responses to SARS-CoV-2 by suppression of excessive inflammatory response [8].

The protocol for selecting donors for FMT has been described previously [6,8]. To apply this protocol for treatment of patients with COVID-19, convalescent donors require a two-fold negative result from nasopharyngeal and oropharyngeal swabs, and stool samples collected at least one day apart. Thus, the screening of FMT donors among recovered patients meets the requirements from international expert panel [1] and can aid treatment.

Convalescent FMT can be delivered via a nasojejunal feeding tube or via the colon using a colonoscope or enema.

The simplicity of preparing the material for transplantation and the minimal restrictions for convalescent donors, combined with the ease of use, suggest that convalescent FMT may be considered as an additional method for the treatment of COVID-19 patients in a critical condition. Clinical trials to test the efficacy and safety of this treatment are warranted.

### Declaration of interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

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