

Nutrition and the microbiota post-COVID-19

Sir,

We appreciated the recent review on nutrition and the gut microbiome during critical illness published by Sara Zaher in the Saudi Journal of Gastroenterology.^[1] The author highlighted the importance of nutrition in the treatment of critically ill patients. We believe that this manuscript is highly relevant to the scientific community, especially in the current coronavirus disease – 2019 (COVID-19) pandemic caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). We would like to add a few key points about the importance of nutrition in patients recovering from COVID-19.

Recent studies have demonstrated that after COVID-19 resolution patients develop gastrointestinal dysbiosis, even in the absence of gastrointestinal manifestations.^[2] In addition, patients can develop a dysbiotic gut microbiota in consequence of treatment with antibiotics for secondary bacterial infections or enteral nutrition.^[1,3]

Gastrointestinal dysbiosis predisposes patients to gastrointestinal inflammatory responses, malnutrition,^[1] and also to viral and bacterial infections inside and outside the gut microenvironment.^[2]

Since nutritional status shapes the immune response and also the gastrointestinal microbiota, it is possible that patients with severe COVID-19 presented a dysbiotic microbiota previously to the SARS-CoV-2 infection.^[4] Therefore, COVID-19 may further enhance a previously dysbiotic microbiota or generate a dysbiosis that leads to chronic diseases such as obesity and metabolic disorders.^[4]

Since there is a lack of knowledge about the long-term impact of COVID-19, it is important to consider that nutrition may play a big role in the re-establishment of the microbiota in post-COVID-19.

The ingestion of prebiotics and probiotics could aid the re-establishment of the gastrointestinal microbiota, especially in species highly affected by the usage of antibiotics and the natural infection by the SARS-CoV-2.^[1,2]

In summary, after the recovery of COVID-19, patients may develop a dysbiotic process that can increase the risk of development of infections. Nutrition could play a central role as a therapeutic intervention post-COVID-19 to re-establish the microbiome and immune response.

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Conflicts of interest

There are no conflicts of interest.

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