



ABSTRACT

Nutritional strategies in Covid-19 patients with gastrointestinal dysfunction

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Health of humanity is under severe threat since the global outbreak of coronavirus disease 2019 (COVID-19), after the first case was reported in December 2019, from Wuhan, China. The World Health Organisation classified it as a *pandemic* in March 2020. As on September 4th, 2021, more than 218 million cases of COVID-19 have been reported from more than 188 countries and territories¹. As this global threat typhoons across the world, the disease manifests with myriad of symptoms, none of which are diagnostic of COVID-19! The common symptoms are cough, headache, dyspnoea, myalgia, fever, lethargy and severe pneumonia. Uncommon are anosmia, chest pain, cardiac arrhythmias, confusion, etc. In addition, there are several case-reports describing the varied effects on the digestive tract - anorexia, abdominal discomfort, nausea, vomiting, and diarrhea.

Nutritional support in infections, including that due to COVID-19, is a key aspect, as it has the potential to limit the severe intensity of inflammation, to modulate optimal immune responses, whilst, limiting the loss of lean-body mass, thereby promoting enhanced recovery. However, optimal function of the gastrointestinal tract is essential to provide adequate nutrition, with optimal digestion and absorption. Intolerance to oral or tube feeds are common in COVID-19 patients, especially in those with severe disease. Gastrointestinal hypomotility is common in presence of cytokine storm and also poses a major challenge in feeding patients who are sedated, on mechanical ventilation support, and in prone-position².

A high-calorie diet of ≥ 1500 -2000 calories, with a high-protein intake of 75-100g/d is advised to maintain an optimal immune response and for other metabolic functions². Oral route is preferred in those who can eat. In those with severe anorexia, oral nutrition supplements (ONS) will be required to meet the nutritional goals. Gastrointestinal dysfunction poses a major challenge in achieving nutritional goals.

The various strategies to improve tolerance are as follows³:

- i. Correction of electrolyte abnormalities, hyperglycaemia, and azotaemia, if present.
- ii. Intravenous prokinetics – metoclopramide or erythromycin (or both)

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- iii. Consider semi-elemental supplements, especially in malabsorption and maldigestion.
- iv. Avoiding concentrated feeds and bolus feeds and consider reducing the feeding rate.
- v. Insertion of post-pyloric feeding tube using full protective equipment is recommended if gastric emptying presents a challenge. Parenteral nutrition should be considered if gastrointestinal intolerance remains an issue over a week despite the use of appropriate management strategies, and calorie and protein delivery are consistently < 50% of target. Commence post-pyloric feeds if the above measures fail.

If all the above strategies are not successful, parenteral nutrition should be commenced. All patients should be monitored for adequacy of nutrient interventions, metabolic and mechanical complications. ONS are advised for ≥ 1 month after recovering from the acute phase of illness.

Though oral or enteral nutrition is preferred, the effects of COVID-19 on functioning of gut can significantly impact this route. Evidence-based strategies might improve the tolerance, but the threshold to start early parenteral nutrition should be low, in order to optimise the caloric, protein and micronutrient needs.

Keywords: covid-19, gastrointestinal, parental nutrition
