Nutritional Considerations for the Critically Ill COVID-19 Patient

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Introduction

Since early 2020, new research for this complex patient population emerges every day. While we have learned much about the disease process leading to many improvements in its clinical management, efforts to provide adequate nutritional therapy have not been as successful. Barriers to nutrition interventions have included but are not limited to: breakage of BiPAP seal for nasogastric (NG) tube feeds, contact precautions, hemodynamic instability and risks associated with parenteral nutrition (PN). However, as new research surfaces and health care professionals learn more about the clinical management of this virus, room is made for prioritizing nutritional therapy. This study reviews what we know so far concerning nutrition for this population and examines emerging research aimed to reduce mortality rate and meet their nutritional demands.

Calorie & Protein Requirements

For patients with a BMI within normal limits…

- 15-20 kcals/kg ABW
- 1.2-2 g protein/kg ABW

For patients with a BMI of 30-50…

- 11-14 kcal/kg ABW
- 2-2.5 g protein/kg IBW

For those with a BMI >50…

- 22-25 kcal/kg IBW
- 2-2.5 g protein/kg IBW

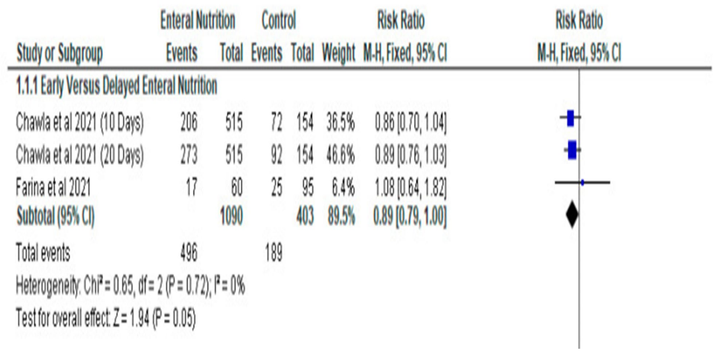
Early Enteral Nutrition Therapy

Recent studies (March 2022) show that early enteral nutrition (EN) significantly reduces the risk of mortality among critically ill patients with COVID-19.

- Within 24-36 hours of ICU admission
- Within 12 hours of intubation
- Relative Risk Reduction (RRR) of mortality in patients with COVID-19 by early EN was 11%.
- Early EN was not associated with reduction in LOS or days on the mechanical vent.

Early Parenteral Nutrition Therapy

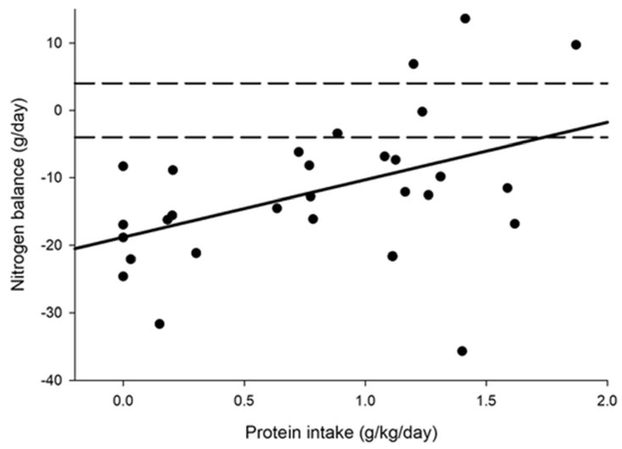
If early EN is not possible due to GI complications, use of BiPAP/CPAP, or hemodynamic instability with escalating vasopressor support, PN should be initiated as soon as possible. Early PN, ***as compared to no nutritional therapy*** has been shown to improve mortality in patients with pre-existing malnutrition.



Protein for the Vent-Dependent Patient

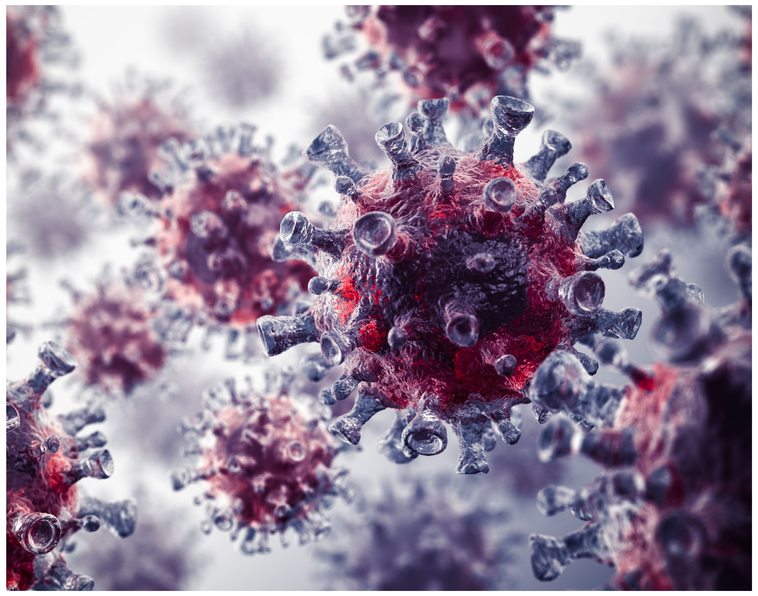
Recent studies indicate critically ill patients with coronavirus disease 2019 (COVID-19) are hypermetabolic; however, protein requirements in critically ill COVID-19 patients are unknown.

- This study evaluated nitrogen balance in response to varying protein intakes for critically ill vent-dependent COVID-19 patients.
- Although there was a highly variable response to increase in protein intake, linear regression analysis suggested 1.5 g/kg/day of protein is required to achieve nitrogen balance.



Conclusion

Although the COVID-19 virus can cause delays in delivery of adequate nutrition support, research suggests that initiation of nutrition support as early as possible can significantly reduce mortality risk. Feeding this unique population is complex but improves each day as new research is released.



References

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