

Pragmatic Covid-19 Nutrition Protocol

Letter to Editor

Saseedharan S*, Annapurna and Kadam V

Department of Critical Care, S.L. Raheja Hospital- a Fortis Associate, India

***Corresponding author:** Saseedharan S, Department of Critical Care, S.L. Raheja Hospital- a Fortis Associate, Mumbai, Maharashtra, India, Pin Code: 400016, Tel Num: 00919004479549; E-mail address- docsanjith@rediffmail.com

Article Information: Submission: 12/10/2020; Accepted: 29/10/2020; Published: 03/11/2020

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Letter to the Editor

We write to you regarding a pragmatic nutritional protocol that our tertiary care institute has been following which has helped to make critical care nutrition safe, scientific and objective with minimal risk.

Introduction

The clinical spectrum of COVID-19 disease appears wide encompassing ranging from asymptomatic infection to mild upper respiratory tract infection, and severe pneumonia with respiratory failure. Cardiac and renal failure has also been seen. These patients are known to deteriorate rapidly. Most severe complications and deaths are reported among older patients with evidence of premorbid illness such as cardiovascular, liver, kidney disease, or cancer.

C-reactive protein, and serum albumin have been shown to be independent prognostic markers and serum albumin is a good marker for the nutritional status as well. Although albumin is not exclusively dependent on nutritional status, it is part of several nutritional screening indices and is associated with nutritional conditions. Interestingly, low prealbumin levels, another marker of malnutrition, have been demonstrated to predict the progression to respiratory failure and mechanical ventilation. This evidence strengthens the concept that nutritional derangements should be systematically and urgently managed in patients affected by COVID-19, also considering that the immune response has been shown to be weakened by inadequate nutrition. The author's institute has been catering to the maximum number of Covid-19 patients in the city of Mumbai for the last 4 months as this is a dedicated Covid hospital. Since knowledge, experience and practice sharing is so important the authors decided to write this article.

Covid- 19 Nutritional Challenges

These are the challenges faced in the Indian ICUs

- Staffing is a problem in view of adjustments in various ICUs, restriction in the number of duty hours and offs given.
- Fear among dieticians to enter the COVID ICUs.
- Food and beverage are generally dependent on these dieticians for getting their input, which is now not there and thus left in a bad shape.
- Kitchen feeding becomes problematic as individual feeding is difficult with low staff and staff in PPEs.
- Food recall is a problem.
- Because of the need of a paperless system, diet charts are a problem, thus we need software for both nutritional assessment and diet.
- Diet should be planned in such a way that it is in the same time as medication, thus decreasing the time of contact of staff with the patient (clustering of activities).
- Wide availability of three in one (total parenteral nutrition) bags and powder based nutrition.

The protocol

Keeping in mind all the above, we have an "India" specific protocol (using products available in India and Asian countries) that can be implemented all over the country easily by bed side nurses. It is simple, nurse managed, has timely doctor feedback and is evidence based as much as possible. The early nutritional supplementation protocol that is being followed in our tertiary care center we call as "dr sanjith's protocol" is summarized in Figure 1.

On admission to the ICU, the height and weight of the patient is taken, actual weight if the patient can stand and an approximate weight if the patient cannot stand. Malnutrition screen using NUTRIC score and NRS 2002 is carried out.

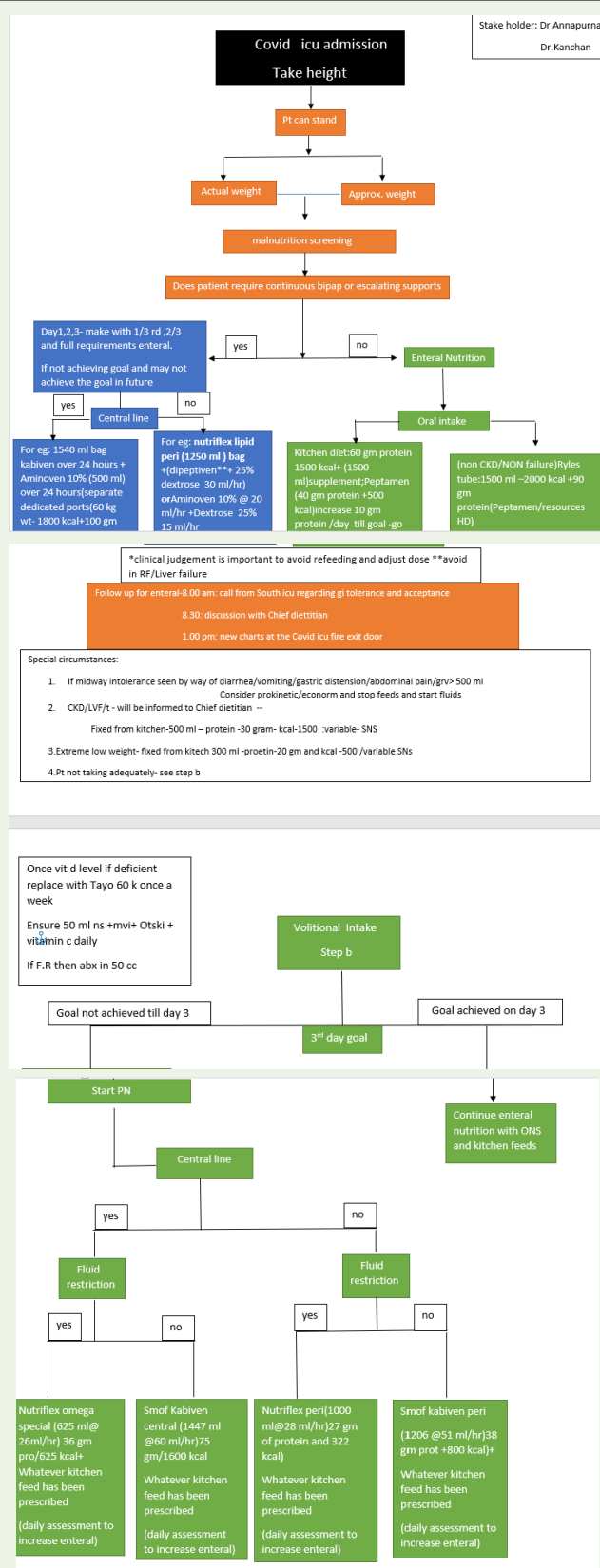


Figure 1

The goal is to achieve target calorie and protein requirements by day 3 of admission.

Scenario 1: If the patient is just requiring oxygen support, enteral nutrition is started which consists of kitchen diet with 60 gm protein and has 1500 k cal. Oral nutrition Supplement with Peptamen 40 gm protein and 500 kcal is started. Increase the proteins by 10 gm per day later to achieve calorie and protein goal.

In case of CKD /Poor cardiac function (EF), the chief dietician is informed about fluid restriction and feed from kitchen is 500 ml, with 30 gm protein and 1500 k cal.

Scenario 2: If the patient is on escalating support of thus not capable of taking oral diet, ryles tube feeds need to be started. In this patient if no fluid restriction, 2000 k Cal with 90 gm protein, Peptamen /resource HD with 1500 ml fluid should be started. If the patient is on BiPAP, we still start enteral feeding as described above. But if the requirement of BiPAP is continuous or requirement of support is escalating, the patient will not be able to take enteral nutrition adequately.

If both the above stated scenario patients intake is not adequate, goal is not achieved by day 3, start parenteral nutrition. If the patient has a CVP line and has fluid restriction Nutriflex omega special (625 ml@ 26 ml/hr) 36 gm proteins /625 kcal along with whatever kitchen feed has been prescribed. Access the patient daily to increase enteral feed.

If there is no fluid restriction and goal is not achieved then, consider TPN like Smofkabiven central (1447 ml @60 ml/hr) 75 gm/1600 kcal along with the prescribed kitchen diet. Access daily to increase enteral nutrition.

If this patient has no central line, peripheral parenteral nutrition should be started to achieve the goal. Nutriflex peri (1000 ml@28 ml/hr) 27 gm of protein and 322 kcal) along with whatever kitchen feed has been prescribed. Access daily to increase enteral feed. If the patient

has a fluid restriction and has no central line, peripheral parenteral nutrition Smofkabiven peri (1206 @51 ml/hr) 38 gm protein +800 kcal) along with whatever kitchen feed has been prescribed.

Scenario 3: If the patient is on escalating BiPAP support, parenteral nutrition needs to be started to achieve nutritional goal.

If patient has a central line- kabiven 1540 ml is given over 24 hrs along with Aminoven 10 % 500 ml using a dedicated port. This gives 1800 k cal with 100 gm protein. Monitor patient to avoid refeeding. If the patient does not have a CVP line, peripheral nutrition is started-like nutriflex lipid peri- 1250 ml bag. This is given along with dipeptiven (avoid in renal failure and liver failure), 25 % dextrose at 30 ml per hr or aminoven 10 % at 20 ml per hr with dextrose 25 % 15 ml per hr.

If the patient has diarrhoea, vomiting, gastric distention, pain abdomen or a gastric residual volume of >500 ml, consider prokinetic agents, econorm, stop feeding and start IV fluids.

In patients with vit D deficiency, ensure supplementation of Vit D along with Multivitamin and micronutrients like Otski. If all these are increasing the fluid intake, restrict fluid from antibiotics.

Conclusion

Implementing prompt and adequate nutrition in these patients with COVID-19 disease is a difficult challenge owing to the current dramatic emergency circumstances, unknown course and patient profile. However, all efforts should be made to try to guarantee adequate nutritional support to hospitalized critically ill patients, as it may be potentially be beneficial to clinical outcomes and effective in reducing or preventing the deleterious consequences of malnutrition. Presently there is three month follow up of patients having gone through the protocol with respect to their body weight, morbidity and serum albumin levels and results are awaited and preliminary results seem encouraging. The above protocol has been used to close to 200 intensive care patients and has made nutrition delivery in the intensive care short, simple, scientific, objective and safe.