



ABSTRACT

Special Group Discussion: Nutrition and Covid-19 comparison in several countries

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Patients with COVID-19 who are in the ICU considered to be extremely high malnutrition, which is caused by food intake matter and the disease itself. In critically ill, the definition of malnutrition is not only based on weight loss but also muscle wasting, sarcopenia and metabolic dysregulation. Good nutrition management prevents malnutrition getting worse. Nutritional therapy is an essential element of the patients management. Nutritional screening and assessment, as well as nutritional management, should be integrated into general therapeutic strategy. Nutrition therapy to ICU patients with COVID-19 has been published by some institutions/organizations.

In 2020, ESPEN published recommendations concerning on nutrition for people with COVID-19, that supported by expert statements, as there are limited studies. Contribution of these recommendations came from the experts with the best clinical knowledge and experiences. This ESPEN recommendation are divided into two: 1) the prevention and treatment of malnutrition in patients at risk or with COVID-19 and 2) nutritional management in ICU for patients with COVID-19.

In ICU, patients with COVID-19 who are not intubated, and do not reach energy targets with an oral diet should be given oral nutritional supplements (ONS) or enteral nutrition. If patients do not reach the protein-energy targets with enteral and/or oral nutrition, then patients are recommended to receive the peripheral parenteral nutrition. Patients with COVID-19 who are using noninvasive ventilation (NIV) generally receive oral nutrition. There is a research concerning that not all those patients do not reach energy-protein inadequately. However, giving enteral nutrition to patients with NIV has consequences: 1) risk of inadequate airway support due to air leakage and inhibits the effectiveness of NIV 2) occurs gastric dilatation that affects diaphragmatic function and the effectiveness of NIV.

Inadequate intake in the first 48 hours of ICU admission increases the risk of malnutrition and complications. In such patients, receiving parenteral nutrition, other than oral, is considered to increase nutritional intake. In patients receiving only oral nutrition, giving ONS 3 times a day or 600 kCal is very advantageous in increasing nutritional intake. In patients receiving only oral nutrition, giving ONS 3 times a day or 600 kCal is very advantageous in increasing nutritional intake.

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Patients with oxygen support via nasal cannula (FNC, HFNC), generally eat via oral. This condition considered patients are not very sick and allow to get adequate intake. Based on this condition, only a few studies that assessed nutritional adequacy of patients with FNC/HFNC. However, the adequacy of calories and protein intake of that patients may be neglected, which cause decreasing of nutrition adequacy. Nutritional management should be based on good assessment. Oral nutrition is the priority in giving nutrition for patients, enteral nutrition should be considered when the oral intake not fulfill the requirements.

When patients with COVID-19 is not successfully oxygenated with HFNC or NIV for more than two hours, patients have to be intubated and ventilated. Intubated and ventilated patients are advised to receive enteral nutrition as early as possible. Calorie needs should be determined by using indirect calorimetry, if available. If calorimetry is not available, the last option is using predictive equation.

The choice of iso or hypo-caloric administration is based on the acute phase of the patients' illness. After the early phase of acute illness, it is recommended to provide isocaloric nutrition rather than hypocaloric. During early phase, the nutritional choice is hypocaloric (less than 70% of the patients' needs), and may increase up to 80-100% on day three. If the caloric needs are determined using a formula calculation, the nutrition in the first week should be given <70% of the patients' need. Protein is recommended to be given 1.3 g/kg body weight. Protein in this amount is proven to reduce mortality, especially in frail patients.

In nutrition management, enteral nutrition is contraindicated if: 1) there is uncontrolled shock, hemodynamic instability and poor perfusion and 2) uncontrolled life-threatening hypoxaemia, hypercapnia, and acidosis. Small doses of enteral nutrition can be given during the early stabilization period: 1) as soon as shock is controlled with fluid, vasopressor or inotropic administration, while being alert for signs of bowel ischemia, and 2) persistent hypoxemia, and permissive or compensated hypercapnia and acidosis.

ESPEN recommendations are 1) Check for malnutrition, 2) Optimization nutritional status, 3) Supplementation of vitamin and minerals, 4) Regular physical activity, 5) Oral nutritional supplements (ONS), 6) Enteral nutrition (EN), 7) Medical nutrition in non-intubated ICU patients I, 8) Medical nutrition in intubated ICU patients I, 9) Medical nutrition in intubated ICU patients II, 10) Nutrition in ICU patients with dysphagia.

Keywords: ICU, covid-19, enteral nutrition, guidelines, calorie needs
