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Letter to the editor

Nutritional approach to patients with coronavirus: Our experience in a 914 COVID-19–bed hospital



To the Editor:

We read with great interest the article titled “Early nutritional supplementation in non-critically ill patients hospitalized for the 2019 novel coronavirus disease (COVID-19): Rationale and feasibility of a shared pragmatic protocol” [1].

Our Clinical Nutrition Service operates in a hospital company composed of five hospital facilities that is guaranteed, during the period of maximum inflow, 914 COVID-19 beds, equal to 23% of 4006 hospitalized patients in the Piedmont Region, of which 56 were hospitalized in the intensive care unit (ICU) and 54 in the subintensive care unit (SICU). Since the beginning of the pandemic, we have been involved in the nutritional management of patients with severe acute respiratory syndrome coronavirus (SARS-CoV-2) and, like our colleagues with nutritional expertise, we have been committed to building a nutritional protocol, with indications delineated differently depending on the severity of the clinical conditions and the intervention setting. The document, born from the little evidence available in mid-February 2020 [2], has been subject to continuous updating and revisions on the basis of an increase in literature and data [2–7] and on comparisons with colleagues directly involved in patient care [7,8]. It is useful to share the experience gained in our hospitals and our choices because creating dialogue and discussion between health care professionals is necessary to arrive at conscious and shared therapeutic choices for the management of patients affected by a new and still largely unknown disease.

A framework of difficult clinical care management such as COVID-19 infection imposes choices based on pragmatism and simplicity. It was necessary to revise our traditional model of patient care with a consultative or telemedicine approach in relation to objective difficulties (scarcity of personal protective equipment, especially in the initial phase of the pandemic and consequent limitations in access to COVID-19 areas). This has made it necessary, in many cases, to delegate to other health care professionals the collection of anthropometric data and some suggestive clinical aspects on which to rely to estimate the calorie–protein requirements and set up an ad personam therapeutic plan. In drawing up the protocol, we hypothesized the management of a standard patient by using data from literature and clinical observations. In particular, in agreement with data from Caccialanza et al. [1] from a hospital in Pavia, our patients admitted to the ICU and SICU were largely overweight with cases of severe obesity. In many patients, the glycemic compensation was difficult and the pulmonary picture often required a nutritional therapy with low fluid content.

Like our colleagues in Pavia, our protocol included intravenous infusion of multivitamins and trace elements. Considering the length of time needed to obtain the blood dosage of vitamin D, we opted for early supplementation in all hospitalized patients with 30 000 IU of 25-hydroxycholecalciferol.

Patients remained in the ICU for as long as invasive ventilation was necessary; in SICUs, patients were admitted with the need for noninvasive continuous positive airway pressure (CPAP) ventilation until weaning from it.

Unlike Pavia’s experience, in the presence of invasive ventilation, we chose enteral nutrition (EN) via nasogastric tube (NGT) in the first instance.

In agreement with anesthesiologists and resuscitation specialists [9,10], the enteral route was preferred because it is the most physiologic route and because of the importance of central venous catheter positioning in patients with SARS-CoV-2, the difficulty of nursing management of the central venous access, and the high risk for sepsis.

For EN, a high-calorie polymeric formula with reduced content of simple sugars and high content of lipids, rich in antioxidants and ω -3 fatty acids, was indicated as first choice; the total volumes of formula and hydration have been contained within 1500 mL/d. Despite initial hesitations related to the need for pronation, rare episodes of poor tolerance were reported so it was necessary to start parenteral nutrition with small volume formulas that were very concentrated and hyperproteic. In cases of diarrhea linked to the viral pathology, EN was not suspended, but the speed of administration was slowed down.

In patients ventilated with CPAP who were unable to be fed orally, despite the possibility of air leakage, it was nevertheless chosen to continue ENT with NGT even if non-invasive ventilation masks with a port for NGT were not available. We have not had any cases in which it was necessary to suspend EN due to poor tolerance, nor any worsening of respiratory gas exchanges due to air leakage.

Patients weaned from CPAP have been systematically supplemented with high-calorie, high-protein oral nutritional supplements in the amount of two to four or five daily whenever there was a possibility of stopping ventilation, often for a short period of time, thus requiring an easily accessible and usable energy source.

We are aware that our protocol has some operational limitations, but it was developed as a rapid and pragmatic response to a rapidly evolving emergency situation. In our case history, EN has been a valuable tool for nutritional therapy in patients with COVID-19 in the ICU and the SICU.

As the course of the pandemic seems to have stabilized in our country, our hospital maintains 621 COVID-19 beds, equal to 29% of 2153 COVID-19 beds in Piedmont. A facility (COVID-19 OGR) has been opened for the dedicated and multispecialist management of infected patients; the experience that will be gained in the near future will be paramount to implementing the nutritional management of those affected by SARS-CoV-2.

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