



Uncertainty in the time of COVID-19

La incertidumbre en los tiempos del COVID-19

A incerteza nos tempos do COVID-19

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The unprecedented COVID-19 pandemic presents challenges for governments, health systems and society around the world. Organizations, scientific societies, and international experts have highlighted the importance of nutritional care in the treatment of COVID-19. A wide range of opportunities where nutritional therapy could play an important role in the course of the disease have been identified. Additionally, the value of maintaining a healthy lifestyle and diet during quarantine has been emphasized⁽¹⁾.

Today, the world faces the SARS-CoV-2 pandemic with a “double burden” of malnutrition, meaning that a percentage of the world’s population could present with a severe form of COVID-19 associated with malnutrition, and another percentage associated with obesity. A paper by Dr. Juan B. Ochoa showed how, in general terms, there are three different risk phenotypes: 1. The frail elderly patient, 2. The patient with chronic disease, and 3. the patient with severe and morbid obesity. These three phenotypes represent different nutritional risks and require varying nutritional intervention⁽²⁾. Therefore, the challenge of the SARS-CoV-2 pandemic is not only to protect the elderly and polymorbid patients, but also patients affected by malnutrition and obesity.

Nutrition societies have published their own management guidelines based on expert opinion and the experience acquired in managing COVID in the countries that first faced the virus (Italy, China). There is a consensus

among experts on the benefits of nutritional therapy⁽³⁻⁷⁾ (Table 1). For example, Italian experts in Lombardy, the center of the COVID-19 crisis in Italy, strongly recommend the use of early nutritional supplements for non-critically ill patients hospitalized with COVID-19 to combat severe inflammation and anorexia⁽³⁾. The Colombian guidelines emphasize the identification of patients with nutritional risk to initiate optimal and timely nutritional care within the framework of human rights. The latter is particularly important because the Colombian population has been exposed to civil conflict for decades, and the recent forced migration of Venezuelans to Colombia undoubtedly aggravates the situation⁽⁴⁾.

Experts also agree that patients with COVID-19 and acute respiratory complications requiring Intensive Care Unit hospitalization are at significant risk of malnutrition. The metabolic disturbances in these patients leads to loss of skeletal muscle mass and function (sarcopenia), which in turn could lead to increased morbidity, poor quality of life, and disability, even long after discharge from the ICU⁽⁵⁾. Therefore, the experts’ recommendations focus on achieving energy and protein goals, even if enteral nutrition through nasogastric or nasoduodenal tube is indicated, even during the prone position. These recommendations should be considered in the current clinical scenario, which is characterized by a significant shortage of ventilators and other health equipment, of healthcare providers in general, by an increased daily workload, and a high risk of nosocomial transmission.

From my point of view, the main challenge lies in making decisions on the management of COVID-19 in a scenario characterized by uncertainty. According to the Real Academia Española de la Lengua (Royal Academy

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Table 1. Examples of international guidelines and recommendations on nutrition in patients with COVID-19

World Health Organization - Nutrition advice for adults during the COVID-19 outbreak	http://www.emro.who.int/nutrition/nutrition-infocus/nutrition-advice-for-adultsduring-the-covid-19-outbreak.html
<i>Academy of Nutrition and Dietetics</i> - Nutrition-Related Resources for Individuals and Families During Challenging Pandemic Conditions	https://www.eatright.org/coronavirus
<i>American Society for Parenteral and Enteral Nutrition</i> - Nutritional therapy in patients with COVID-19 requiring ICU care - Nutrition and hydration: key weapons in the fight against COVID-19	https://www.nutritioncare.org/COVID19/
<i>American Society for Nutrition</i> - Making Health and Nutrition a Priority During the Coronavirus (COVID-19) Pandemic	https://nutrition.org/making-health-and-nutrition-a-priority-during-the-coronavirus-covid-19-pandemic/
<i>British Association for Parenteral and Enteral Nutrition</i> - Statements and guidelines for nutritional therapy in patients requiring NIV and CPAP during COVID-19	https://www.bapen.org.uk/resources-and-education/education-and-guidance/covid-19
<i>The Brazilian Association for Parenteral and Enteral Nutrition and The Brazilian Intensive Care Medicine Association</i> - Nutritional declaration to face COVID-19 in hospitalized patients	https://www.braspen.org/post/parecer-braspenamib
<i>Asociación Colombiana de Nutrición Clínica</i> - Nutritional recommendations for hospitalized patients with SARS-CoV-2 infection	https://revistanutricionclinicametabolismo.org/index.php/nutricionclinicametabolismo
<i>The European Society for Clinical Nutrition and Metabolism</i> - ESPEN expert statements and practical guidance for nutritional management of people with SARS-CoV-2 infection	https://www.clinicalnutritionjournal.com/
Academia Española de Nutrición y Dietética - Food and nutrition recommendations for the Spanish population in the face of the COVID-19 health crisis	https://www.academianutricionydietetica.org/noticia.php?id=113
<i>Sociedad Francófona de Nutrición Clínica y Metabolismo</i> - Expert opinion on hospital nutritional care strategy	https://www.sfnm.org/images/stories/ARTICLES/2020/PEC_NUT_HOPITAL_COVID19_SFNCM.pdf
<i>Multidisciplinary team of experts from Lombardy, Italy</i> - 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	https://www.sciencedirect.com/science/article/pii/S0899900720301180

of the Spanish Language), uncertainty is defined as “the lack of certainty, of assurance”. Certainty is “the firm conviction and clear knowledge of something; the firm adherence of the mind to something knowable, without fear of erring”. In other words, decisions concerning the life and death of thousands of sick people are made without solid knowledge and under the constant fear of causing harm. Decisions made in this way jeopardize the ethical principles and values of beneficence, non-maleficence, justice, equity, and respect for human dignity. Given the uncertainty about the course of the COVID-19 pande-

mic, in an article published in *Nutrition in Clinical Practice*, Barrocas et al. propose an ethical framework for decision-making in a context of scarce resources, and emphasize the importance of ethical protocols and a multidisciplinary decision-making approach⁽⁸⁾.

In this context, there has been a worrying influx of scientific articles. A search conducted in PUBMED shows that from January 1 to November 15 2020, 34,462 articles have been published on COVID-19 and 18,834 on SARS-CoV-2. Publishing this number of articles in such a short period of time means that they have been published

hastily, and sometimes probably evading the requirements to meet editorial standards. An expression of this is the not inconsiderable number of articles retracted from prestigious journals. As of November 2020, 38 articles had been permanently retracted and 3 temporarily retracted⁽⁹⁾.

For example, an article that erroneously stated that Vitamin D sufficiency (serum 25-hydroxyvitamin D of at least 30 ng/mL) reduced the risk of adverse clinical outcomes in patients with COVID-19 infection was retracted. Also, the retraction of controversial articles published in *The Lancet* and *The New England Journal of Medicine* draws attention to a deep trust issue in research and fuels the controversy over economic and political interests in science. However, even if it was the editorial process of these publications which failed, most probably during the peer review process, the scrutiny of the scientific community, probably driven by the media attention on coronavirus research, allowed the faults to be detected in record time. These retractions and the controversy generated are not an exceptional case. According to Ivan Oransky, some 1500 articles are retracted each year due to lack of scientific solidity⁽⁹⁾, but the COVID-19 crisis brought this serious problem to light.

The nutritional management of patients with COVID-19 does not escape this scenario. There is no certainty about the metabolic impact of the virus on the patient and, therefore, there is also no clarity on the best way to address nutritional challenges or the nutritional needs of patients with COVID-19 requiring mechanical ventilation. According to expert opinion, their nutritional needs are similar to those of any patient with acute respiratory distress syndrome (ARDS)⁽¹⁰⁾. In this context there, an influx of scientific articles has not been observed, on the contrary, the shortage of articles is disturbing. A search in PUBMED yielded 1200 articles on “COVID-19 and nutrition” and 766 articles on “SARS-CoV-2 and nutrition”, which is equivalent to 1.6 % and 1.7 % of the total number of published articles, respectively.

Undoubtedly, it is not a matter of quantity of information but of quality of the scientific evidence. In other words, to evade uncertainty, knowledge arising from a high-quality scientific method that follows a rigorous editorial process is required. Expert opinion is essential, but it must be rebutted or confirmed under the standards of science through randomized controlled studies.

In the field of clinical nutrition, the main concern is the scarcity and poor quality of published research. An example of this and of the danger of poor quality of nutrition research is the article by Yu PJ et al. published in the *Journal of Parenteral and Enteral Nutrition* where they

suggest that critically ill patients with COVID-19 are in an extreme hypermetabolic state. The study involving 7 critically ill patients with COVID-19 showed a median resting energy expenditure (REE) of 4044 Kcal/day obtained by indirect calorimetry. The authors conclude that it is necessary to “enhance nutritional requirements for these patients”⁽¹¹⁾. This article is surprising not only because of the high REE values, but also because of the poor methodological description and the lack of information on the cases studied, which prevents an accurate analysis of the results. We will never know if the high REE values obtained were the result of technical failures, to specific clinical situations (severe pulmonary shunt) or if this is the genuine metabolic profile of patients with COVID-19. These types of articles generate more uncertainty than certainty and put the lives of patients at risk.

These concerns are also shared by Dr. M. Isabel T.D. Correia in her article *Nutrition in times of Covid-19, how to trust the deluge of scientific information*. She highlights the high number of articles published on COVID-19 from countries initially affected by the disease, which additionally are mostly epidemiological observations or opinion articles that do not meet research quality standards. Furthermore, she highlights that nutritional therapy for patients with COVID-19 is a topic that is not frequently addressed in published studies despite being of utmost relevance in the holistic approach of any individual⁽¹²⁾.

Thus, I share with Dr. Correia that “the best patient care must combine clinical reasoning with scientific knowledge. The massive deluge of publications is not necessarily indicative of scientific quality.”

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