

CORRESPONDENCE

Is nutrition the forgotten risk factor in COVID-19 infection?*



¿Es la nutrición el factor de riesgo olvidado en la infección por COVID-19?

To the Editor,

We read the articles by Casas-Rojo¹ and Suarez² with interest. It is curious that multiple risk profiles for infection, hospital or intensive care unit admission, and death from

COVID-19 have been published since the beginning of the pandemic. In all of them, age, hypertension, male sex, diabetes mellitus, and obesity have been included as risk factors. On the other hand, the recommended therapeutic strategies have changed. Notably, nutritional status is not included in these risk profiles. We strongly agree that several nonmedical factors and conditions can influence health.³ It is a no-brainer to say that nutritional status is considered both a health status indicator and an element of resistance against intercurrent diseases.

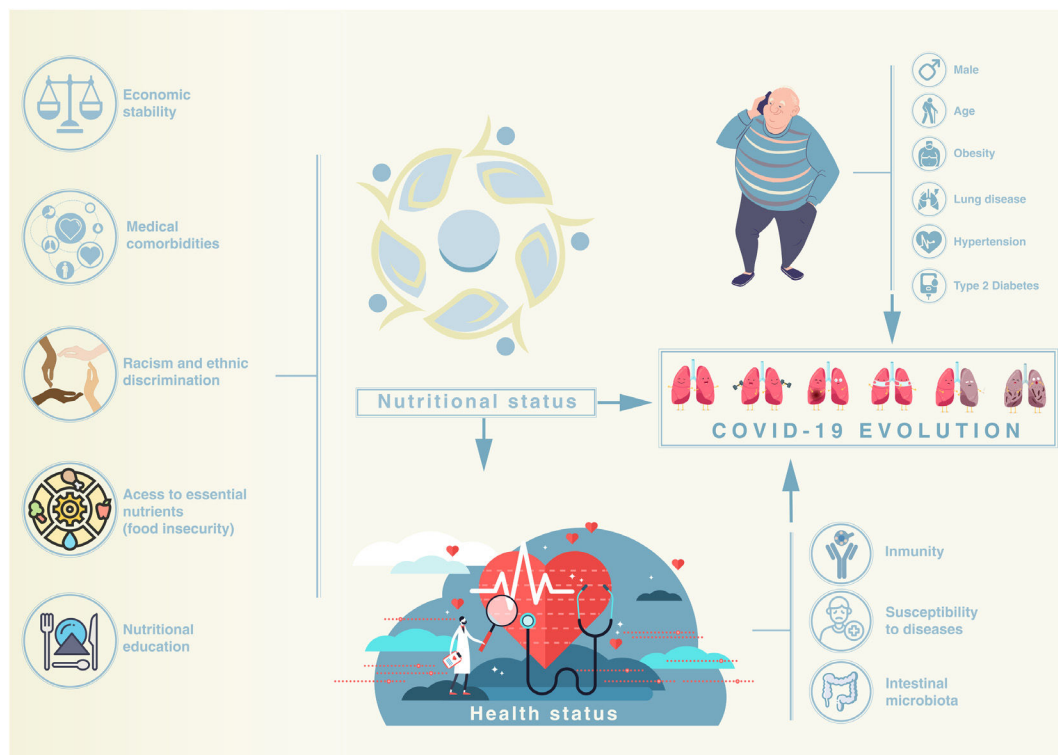


Figure 1 The interrelationship between nutritional status, health, and COVID-19 progress.

Several mechanisms have been implicated in COVID-19 progress. Host-related factors include sex, age, and lung and metabolic diseases. A more unknown aspect is the interrelationship between nutritional status and health at not only the individual, but also the community and global levels. Several factors contribute to nutritional status, including economic stability; medical comorbidities; racism or other discrimination; and food insecurity, as determined by unequal access to essential nutrients or healthy food. All condition community and individual health status such that, through impaired innate and acquired immunity or unhealthy gut microbiota, they predispose individuals to infectious diseases as well as more aggressive and severe COVID-19 disease.

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Evidence has been reported on the influence that diet has on the immune system and susceptibility to disease. It has been shown that a deficit in specific nutrients affects the immune system through cell activation, changes in the production of signaling molecules, and gene expression. Nutritional deficiencies in energy, protein, and micronutrients have been associated with depressed immune function and increased susceptibility to infection.⁴ In addition, dietary components are significant determinants of gut microbiota composition and, consequently, can shape the characteristics of immune responses in the body. Nutritional support therapies form part of the care for patients with a high degree of comorbidity and advanced age, factors related to a higher probability of presenting with poor progress (Fig. 1).

Just a few small studies have reported on the nutritional status of patients with COVID-19, and, in those works, it was clear that patients with nutritional deficiencies had poor progress.⁵ We have not found any recommendations regarding treatment and prevention strategies in this regard, only opinion articles. If the nutritional status is a decisive factor in the progress of patients with infectious diseases, it leads us to ask ourselves, is nutrition the forgotten risk factor in COVID-19 infection?

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COVID-19 myopericarditis: A case report[☆]



Miopericarditis por COVID-19: A propósito de un caso

Dear Director:

SARS-CoV-2 fundamentally causes a severe respiratory infection characterised by diffuse interstitial infiltrates. Some cases of myocarditis have been reported as causing arrhythmia, heart failure, cardiogenic shock, and even death in some patients.^{1,2} The most likely pathophysiological mechanism is multifactorial: from the direct damage of the virus to the cardiomyocytes, the immune response generated by the body against the viral infection, or the hypoxia-induced injury.³

We present the case of a 61-year-old male with a history of obesity who self-referred for symptoms of progressive dyspnoea of five days since onset and was admitted with severe hypoxemic respiratory failure.

The chest radiography showed bilateral interstitial infiltrate (Fig. 1A). Severe pneumonia due to Covid-19 was suspected and confirmed via PCR. Due to hemodynamic and respiratory instability, orotracheal intubation and mechanical ventilation was required; a transthoracic echocardiogram (TTE) was performed which showed severe dysfunction of the right ventricle with paradoxical septal motion due to overload of the right cavities, in addition to severe tricuspid regurgitation.

With suspected pulmonary thromboembolism, computed tomography angiography (CT angiogram) of the chest was performed, confirming the presence of thrombi in both main pulmonary arteries (Fig. 1B). This clinical situation required high dose catecholamines and elevated oxygen requirements, so systemic fibrinolysis was administered. During admission, a progressive trend towards stabilisation of the clinical picture was observed with improved right ventricular function and normalisation of the cardiac damage markers.

On the seventh day of admission, under sedation and analgesia and connected to invasive mechanical ventilation, the patient presented electrocardiographic changes (ECG) with generalised concave ST elevation (Fig. 1C), confirming elevation of the cardiac damage markers. A new TTE was performed, showing adequate left ventricular ejection fraction (LVEF), with mild to moderate pericardial effusion, suggestive of acute myopericarditis.

[☆] Please cite this article as: Pérez-Acosta G, Santana-Cabrera L, Blanco-López J, Martín-González JC. Miopericarditis por COVID-19: A propósito de un caso. *Rev Clin Esp.* 2021;221:312–313.