

**Vitamin D — A potential life saver for patients with SARS-CoV-2**

Laiba Siddiqui, Faez Muhammad, Rabbia Gul

Madam, the coronavirus disease 2019 (COVID-19), is a global pandemic and hazard to many lives, induced by a novel beta-coronavirus referred to as Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2).<sup>1</sup> This virus infected over 90 million people, leading to two million deaths after its outbreak in Wuhan, China.<sup>2</sup> The pathophysiology of this virus involves the invasion of the respiratory tract via respiratory droplets followed by infection of the lung parenchyma. The infection process triggers the release of proinflammatory chemokines and cytokines as an immune response, that in most cases can withstand the infection.<sup>1</sup> An immune response that is dysfunctional leads to further advancement of the disease in which a patient develops Acute Respiratory Distress Syndrome (ARDS).<sup>1,3</sup> ARDS is responsible for 10% of intensive care unit (ICU) admissions leading to the dysfunction of organ systems and death in 50% of cases.<sup>3,4</sup> This highlights the importance of maintaining a healthy immune system that is sufficient to combat SARS-CoV-2. A study done by Castillo et al. in Spain, led to the discovery that demonstrates how the immune response can be reinforced in patients infected by SARS-CoV-2, by the administration of oral calcifediol (25-hydroxyvitamin D3).<sup>3</sup>

Calcifediol, a metabolite of vitamin D, suppresses the "cytokine/chemokine storm" and beneficially regulates the host response to SARS-CoV-2.<sup>3</sup> Therefore tapering down the patient's need for ICU admissions and assists in potential recovery.<sup>3</sup> The results of this study offer countries like Pakistan, a vitamin D deficient population, a probable solution for patients with a severe case of SARS-CoV-2.

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3rd Year MBBS Student, Dow International Medical College, Karachi, Pakistan.  
**Correspondence:** Laiba Siddiqui. Email: laiba.aleem12@gmail.com

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It has been observed that 53.5% of Pakistan's population suffers from vitamin D deficiency.<sup>5</sup> Although Pakistan is a country with no shortage of sunlight, factors such as apartment living, atmospheric pollution, cultural stigmas that restrain elderly women and children to their homes and a poor diet, contribute to the deficiency of this vitamin.<sup>5</sup> Taking into account that COVID-19 is an ongoing pandemic that is continuously being researched, the study conducted in Spain is fairly recent. However, the exponential rise in infections and high mortality rates raise prevention concerns for the healthcare system; thereby, increasing the responsibility of all healthcare professionals to continuously follow up with recent studies hoping to see better outcomes from the battle against COVID-19. Conducting similar studies in Pakistan have the potential to help implement a beneficial approach, in which calcifediol should be prescribed to patients in need of ICU due to SARS-CoV-2 infection.

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