

## CORRESPONDENCE

## Aged diabetic amputee with COVID-19: A medication therapy

To the editor:

Both innate and acquired immunity can be presented in the human body. Immunity defends us against disease of foreign organisms like bacteria, viruses, and other microbes.<sup>1</sup> Corona virus disease 2019 (COVID-19) has been declared a global pandemic by the World Health Organization, as the novel coronavirus continues to spread swiftly over the world. COVID-19 has a very detrimental impact on people who have disease problems or who are elderly, and it can potentially cause death.<sup>2</sup> According to research, diabetics are more prone to infectious illnesses, particularly those of bacterial and viral origin, and this, in turn, leads to an uncontrolled immune response.<sup>3</sup> The majority of studies point to a lack of immunological response as a cause of diabetes risk.<sup>4</sup> In severe acute respiratory syndromes (SARS) patients, diabetes mellitus (DM) is regularly identified as a separate risk factor for respiratory tract infections, morbidity, and death.<sup>5</sup> In comparison to other causes of respiratory disease, the coronavirus has received much attention, especially following the SARS and Middle East Respiratory Syndrome (MERS) epidemics. In terms of risk factors, clinical symptoms, and clinical outcomes, the COVID-19 was identical to SARS and MERS. The diabetic amputee's COVID-19 rehabilitation was reported and treated with specific symptomatic and supportive therapy, and the patient was discharged after 22 days.

For the preceding 4 days, an 80-year-old diabetic man with dry cough, sinus congestion, and intermittent fever due to recent amputation of his right little toe was presented to the Santhiram general hospital. After a nasopharyngeal swab sample collection and a COVID profile test, he was found to be positive for COVID-19. In addition, a chest computed tomography (CT) was performed for confirmation of SARA COV-2 viral lung invasion. On CT, there was no evidence of COVID-19 (CO-RADS 3). He was placed in the COVID-19 isolation ward as a result.

He was diagnosed as a diabetic for the past 9 years, with irregular medication and insulin therapy. He had never suffered hypertension before. The patient had type-II DM, which was untreated and resulted in severe cellulitis and resistance to antibiotics. The toe was removed due to the severity of the ailment. The wound region showed signs of tissue development. Regular dressings, as well as continuing

insulin medication and antibiotics, were used to treat it. Glyburide 5 mg twice daily tablet, insulin 30 IU/day, COVID-19 symptomatic treatment, Prophylaxis treatment of Hydroxychloroquine (HCQ) 400 mg, and Azithromicine 500 mg as per clinical management protocol (CMP): COVID-19, Government of India, vitamin supplements, and medical dressing were among the medications prescribed at the time of admission. A physical examination revealed a body temperature of 103.0°F, a pulse rate of 100, a respiratory rate of 22, a SpO<sub>2</sub> level of 96%, and a blood pressure of 130/70 mmHg upon admission. The WBC count was 11,000 cells/cu.mm, the differential count of neutrophils was 58%, lymphocytes were 55%, eosinophils were 1%, and monocytes were 10%, according to laboratory data. The basophil count was 1%, the hematocrit was 45%, and the platelet count was 2.5 lakhs/cu.mm. His serum chemistry revealed a sodium level of 140 mEq/L, a potassium level of 3.9 mEq/L, a bicarbonate level of 25 mEq/L, a blood urea nitrogen level of 21 mg/dl, and a random creatinine level of 1.4 mg/dl. He had a blood sugar level of 220 mg/dl, normal liver function, and sinus tachycardia on his ECG. D-Dimer levels were 509 ng/ml, procalcitonin levels were 0.047 ng/ml, and serum lactate dehydrogenase (LDH) levels were 297 U/L. Interleukin-6 (IL-6) levels were 9.60 pg/ml, D-Dimer levels were 509 ng/ml, and serum LDH levels were 297 U/L. His ferritin level was 56.5 ng/ml, C-reactive protein (CRP) was 5.9 mg/L, and HS Troponin was 3.2 pg/L. IL-6 levels were 1.9 pg/ml after Covid-19 recovery, D-Dimer levels were 260 ng/ml, procalcitonin levels were 0.1 ng/ml, and serum LDH levels were 180 U/L. He had a ferritin level of 92.3 ng/ml, a CRP level of 3.5 mg/L, and an HS Troponin level of 5.6 pg/ml. The patient treated COVID-19 symptomatically and managed a foot infection with medical dressings while also taking antidiabetic drugs and insulin to keep blood sugar levels under control.

In recent decades, diabetes mellitus has become more frequent, posing a global health issue.<sup>6</sup> In this case, the patient had an underlying health condition, such as being older; diabetes amputation was considered a high-risk factor for the novel coronavirus to affect the patient; and the patient had symptoms such as fever, dry cough, and nasal congestion. If the suggestion for hospital admission is delayed, the severity of the patient's illness may worsen. According to previous research,<sup>7</sup> COVID-19 causes more

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difficulties and mortality among older diabetics. Patients with chronic conditions, particularly those with diabetes and diabetic foot ulceration and amputation, were greatly aggravated by the mandated lockdown, putting a significant strain on healthcare services in terms of death and reduced quality of life.<sup>8</sup>

In this case, the levels of IL-6, D-Dimer, and serum LDH increased, whereas the levels of HS Troponin, Ferritin, and CRP remained normal. The elevated D-Dimer readings could imply that the hypercoagulable state is linked to a greater mortality rate in COVID-19.<sup>9</sup> A decreased immune response is caused by increased inflammatory serum levels, such as IL-6.

In type 2 diabetes patients, both insulin and antidiabetic medications have proved to have optimal glucose-lowering and anti-inflammatory effects, and may be a feasible therapeutic choice for the treatment of asymptomatic and noncritically ill diabetic patients with COVID-19.<sup>10</sup> The COVID-19 was treated symptomatically with Hydroxychloroquine, Azithromycin, antipyretics, and a combination of Phenylephrine Chlorpheniramine and Dextromethorphan, as well as antihyperglycemic agents, insulin, and supplements such as vitamin D3, zinc, and antioxidants, to prevent further complications and increase clinical efficacy.

COVID-19 is a rapidly spreading pandemic. One of the most common complications in COVID-19 patients is type 2 diabetes, which is an independent predictor of poor outcomes. Because hyperglycemia and hypoglycemia are connected to an elevated inflammatory profile and acute coronary events, rigorous glucose management is critical. For noncritical diabetic or diabetic Amputees with COVID-19, successful glucose-lowering, anti-inflammatory effects, and effective diabetic foot care, both insulin and antidiabetic medicines alone or in combination, can be a realistic therapeutic choice. The government's social isolation and other COVID-19 infection prevention measures are recommended for diabetic patients with complications. Because his little right toe had already been removed, educating the patient on proper foot care, avoiding further infection exposure, and preventing COVID-19 was a vital work role in this case.

#### ACKNOWLEDGMENTS

None.


#### CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

#### ETHICS STATEMENT

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The

patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Edited by Yi Cui

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