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Is there a need for a treatment for COVID-19-induced diabetes?

Epidemiological data show that patients with diabetes who are COVID-19-positive may have a higher risk of serious complications [1]. In addition, during SARS-CoV-2 infection glycemic normalization is more difficult to achieve, with the risk of complicating the clinical scenario even more. This evidence shows that the patient with COVID-19-positive diabetes is a complex patient. SARS-CoV-2 uses the angiotensin 2 converting enzyme (ACE2) receptors expressed in different tissues including pancreatic beta cells to enter cells. We can hypothesize [2] this is the mechanism underlying the alterations of glycemic homeostasis with the risk of damage to the patient with persistent diabetes and of inducing diabetes in patients without persistent metabolic disease.

Some data also suggest a higher incidence of glycemic dysregulation in patients with SARS pneumonia compared to those with pneumonia from other viral causes [3]. However, recent evidence has shown that SARS-CoV-2 also binds to DPP4/CD26 when it enters respiratory tract cells. In addition, another recent study has clearly reported a correlation between DPP4 and ACE2, suggesting that both membrane proteins are relevant in the pathogenesis of virus entry [4, 5]. One could hypothesize the use of antidiabetic drugs to manage cases where there is COVID-19-induced glycemic dysregulation. In particular, the gliptin class may be the most indicated among antidiabetic drugs, for several reasons [6].

The inhibition of DPP4/CD26 could antagonize the mechanism of cellular penetration of the virus. In addition, gliptins, which are associated with anti-inflammatory effects and reduction of overproduction of cytokines, are drugs that can ensure glycemic normalization and have low risk of causing hypoglycemia. Epidemiological studies are necessary to confirm these hypotheses [7, 8].

Conflict of interest

None of the Authors have conflicts of interest to disclose.

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