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Editorial

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Can Dipeptidyl Peptidase 4 Inhibitor Be the Therapeutic Candidate for the COVID-19?

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Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which causes coronavirus disease 2019 (COVID-19) has reached a pandemic level. There is an urgent need for effective treatment. Dipeptidyl peptidase 4 (DPP4; also known as cluster of differentiation 26 (CD26)) was identified as a functional receptor for the Middle East respiratory syndrome coronavirus (MERS-CoV) [1]. It has been speculated that the preferential spatial localization of DPP4 in alveolar regions may explain why MERS is characterized by lower respiratory tract diseases [2], and such characteristic was also observed in COVID-19. The S1 domain of SARS-CoV-2 spike glycoprotein potentially interacts with the human CD26, a key immunoregulatory factor for hijacking and virulence [3].

The widespread expression of DPP4 on blood vessels, myocardium, and myeloid cells and function of CD26 as a signaling and binding protein suggest a crucial role in cardiovascular regulation and inflammation [4]. DPP4 is upregulated in proinflammatory states such as obesity, diabetes and atherosclerotic diseases [4]. In a recent retrospective cohort study of COVID-19, comorbidities were present in nearly half of patients, with hypertension (30%) being the most common comorbidity, followed by diabetes (19%) and coronary artery disease (8%) [5]. In univariable analysis, odds of in-hospital death were significantly higher in patients with diabetes (2.85) or coronary artery disease (21.40) [5]. DPP4 inhibitor is the most commonly used oral antidiabetic drug, and its safety is excellent. The sub-analysis of COVID-19 retrospective cohort studies which evaluate the influence of DPP4 inhibitor use on severity, morbidity and mortality in diabetic patients may assist in the development of new therapeutics for COVID-19.

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Conflict of Interest

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Data Availability

The author declares that data supporting the findings of this study are available within the article.

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