

Editorial

## COVID-19 and Endocrinology

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Corona virus disease 2019 (COVID-19) outbreak has made endocrinologists from all over the world to be the first liner to care for patients. Diabetics are at high-risk categories, but other endocrine diseases such as thyroid disorders, obesity, and adrenal insufficiency may also be impacted by COVID-19.

### COVID-19 INFECTION AND DIABETES MELLITUS

Diabetes mellitus is a global pandemic affecting about 9.3% of the world's population and expected to increase in the coming years.<sup>1</sup> Such high prevalence of diabetes in general population makes it an important comorbidity to consider during the COVID-19 pandemic.

Diabetes increases susceptibility to infections, mostly in the respiratory tract. Hyperglycemia has harmful effects on innate immunity, including dysfunction of phagocytosis, cell-mediated immunity, neutrophil chemotaxis, and angiotensin converting enzyme receptor 2 expression. The latter is an important COVID-19 viral binding site for host cell entry.<sup>2</sup>

When treating patients with diabetes and COVID-19 it is important to differentiate between stress hyperglycemia and true diabetes; then only we can select antidiabetic drugs safely. Sulfonylureas are used cautiously in the quarantined state due to the risk for hypoglycemia. Sodium-glucose transporter type-2 inhibitors or metformin should be discontinued for those having hypoxia, vomiting, diarrhoea, or signs of dehydration as they may precipitate acidosis. Dipeptidyl peptidase IV inhibitors are the safest therapeutic agent in COVID-19. Longer intermediate acting insulin is started in patients with COVID-19 who have hyperglycemia.<sup>3</sup> The glycaemic targets are random plasma glucose of 72 to 144 mg/dl (90-144 mg/dL in the frail or elderly), and a glycated haemoglobin A1c level of less than 7%.

It is recommended that a person with diabetes should avoid crowds (waiting rooms) to avoid cross infection.

Phone calls, video calls, and emails are recommended as the main way for patients to keep in touch with the treating physicians, to guarantee optimal control of the disease. Patients should have a stock of medications and supplies for monitoring blood glucose during the period of home confinement.

### COVID-19 INFECTION AND PITUITARY-ADRENAL AXIS

Adrenal hormones (cortisol, epinephrine, and norepinephrine) play a crucial role in the immune response. The treatment of critically ill COVID-19 patients with adrenal insufficiency includes a continuous intravenous infusion of 200 mg hydrocortisone over 24 hours, preceded by a bolus of 50 to 100 mg of hydrocortisone until symptoms resolve. Expert consensus has recommended an oral stress dose of 20 mg hydrocortisone every 6 hours to maintain a more continuous level of steroid support in a patient with known adrenal insufficiency with confirmed acute COVID-19 infection.<sup>4</sup>

### COVID-19 INFECTION AND PITUITARY-THYROID AXIS

COVID-19 could be one of the aetiologies for subacute thyroiditis. Thyroid function should not be assessed during severe clinical illness because there is an increased risk of non-thyroidal illness syndrome evidenced by decreased free tri-iodothyronine (T<sub>3</sub>), increased reverse T<sub>3</sub>, with low-normal or decreased free thyroxine (T<sub>4</sub>) and low-normal thyrotropin (thyroid-stimulating hormone).<sup>5</sup>

### COVID-19 INFECTION AND PARATHYROID

In the current COVID-19 pandemic, a study has shown patients with lower mean vitamin D levels had higher rates of infection and mortality. The Endocrine Society recommends supplementation with 1000 to 4000 IU/d of vitamin D and a serum 25(OH)D concentration of 30 ng/mL.<sup>6</sup>

### COVID-19 INFECTION AND OBESITY

Obese patients with COVID-19 need intensive care more often, pose difficulty in venous access and intubations,

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have more problems during positioning and transportation. Thus, managing obese COVID-19 patients is challenging. The recommended preventive measures include social distancing, psychosocial counselling, practising healthy diet, home-based physical exercise and tele-medicine.

In conclusion, it is emphasized that common endocrine disorders have to be tackled cautiously in COVID-19 patients to decrease morbidity, mortality, and ensure better quality of life.

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### How to Cite

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