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Case Report

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SARS-Cov-2 Infection Revealed with Central Hypothyroidism

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Introduction

Severe acute respiratory syndrome coronavirus 2 (SARSCoV-2) is a novel coronavirus responsible for a pandemic that emerged in December 2019. Heterogeneous clinical forms are described from asymptomatic to severe hypoxaemic acute respiratory syndrome with multisystem organ failure. Except for diabetes mellitus, there is no data on the impact of this new virus on the endocrine glands.

Cas Report

65 years old male, operated 1 month ago for retinal detachment, admitted in the ICU for SARS-CoV-2 pneumonia. Ten days earlier, the patient had asthenia, fever, headache and dry cough in addition to a psychomotor slowing, general indifference, lack of energy, until a real depressive syndrome.

Following a positive PCR test conducted at a regional hospital, the patient was admitted into our facility. During his admission the patient was conscious (GCS 15/15), dyspneic with a respiratory rate at 22 cycles/min and SpO2 at 95% under 10L/min of oxygen. His blood pressure was 120/80 mmHg, with pulse of 66 beats per minute. A CT scan was done showing lesions extended to more than 50%.

CBC showed an anemia at 10.1 g/dL, lymphopenia of 290/mm, WBC 9950 el/mm3 Platelets of 515000 el/mm3. D-dimers were 550 µg/L, fibrinogen at 6.5g/L, troponins at 24.3 ng/L and BNP at 11 ng/L. Electrolyte panel tests showed normal potassium level (4.3 mEq/L), sodium at 135 mEq/L, urea at 0.31g/l, creatinine at 6.5mg/l, ferritin at 2117 ng/mL CRP at 379 mg/l, PCT at 3.25 ng/ml, albumin at 30g/l and hypocalcemia at 75 g / l.

An etiological assessment of this hypocalcemia was made showing a central hypothyriodism with: TSH at 0.2mUI/L, a T4 at 0.7umol/L and a T3 below 1.5umol/L.

Following the patient's status stability, the therapeutic care was based on Imipenem 1g*3/day, gentamycin 160mg/day, Hydroxychloroquine sulfate (200 mg *3/day), azithromycin (250 mg/day) for 7 days, methylprednisolone (2mg/kg/day), enoxaparin sodium (0.6UI *2/day), vitamin C, vitamin D and zinc for his SARS-CoV-2 pneumonia, besides levothyroxine 25ug/ day ,calcium 2g/day, and magnesium 300mg/day for his central hypothyroidism.

Comment

Data on central hypothyroidism involvement by SARS-CoV-2 is most scarce. In a recently published series of COVID-19 critically ill, COVID-19 patients admitted to the ICU, no pre-existing thyroid problems were reported and it seems that no new thyroid issues have been reported during the COVID-19 illness in this patients cohort.

While In a study of 61 survivors of SARS, hypothyroidism was observed in 7% of the individuals. Hypophysitis causing central hypothyroidism has also been postulated as a possible pathogenic mechanism specially considering the identification of genome sequences of the virus in the hypothalamus and cortex of the brain during the acute stage of the disease.

Conclusion

Novel SARS-CoV2 infection can affect the endocrine system in multitude of ways and the scientific data is under evaluation. Abnormal thyroid function in severely compromised patients with COVID-19 should be investigated (and where appropriate, treated) similar to other ITU patients.

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