



USE OF SYSTEMIC CORTICOSTEROIDS IN THE PATIENT WITH COVID-19 INFECTION: REPORT OF A CASE

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ABSTRACT

The new coronavirus outbreak (2019-nCoV) is a great challenge for doctors. The clinical course of patients has not yet been fully characterized, few data are available to describe the pathogenesis of the disease, and there are still no proven pharmacological therapies.¹

The main clinical practice guidelines, on the management of patients with WHO 2019-nCoV, make recommendations against the use of corticosteroids or mention avoiding their use; unless these are indicated for other medical conditions, which include exacerbation of COPD, asthma, or due to septic shock. However, a study published by the Cochrane Iberoamericano carried out a rapid review in order to respond to the use that corticosteroids were justified in the management of patients with 2019-nCoV.²

Regarding the published articles, one of the most cited was that of C. D. Russell, Millar and Baillie 2020; This article concludes that, as observed in other respiratory infections with other coronaviruses and influenza, there is no reason to expect that patients with SARS-CoV-2 infection will benefit from the use of corticosteroids, concluding that their use in early phase leads to benefits.³

We present the case of an older adult patient with a history of allergic rhinitis, who reports having been exposed to family members with flu-like symptoms, presents respiratory symptoms based on cough, general malaise, anosmia and vomiting, goes to a specialized hospital where they carry out extension studies, highlighting slight neutrophilia and lymphopenia and nasopharyngeal swab: SARS-CoV-2 Positive PCR in addition to ground glass pattern chest tomography, with favorable response to the use of prescribed systemic corticosteroids.

Objective: To analyze the use of corticosteroids in hospital care practice for the treatment of COVID19.

Method: This is a retrospective study. A case of a patient diagnosed with COVID pneumonia is reported, 19 highlighting the use of systemic corticosteroids in the early stages of the disease, obtaining favorable responses.

Conclusion: Coronaviruses (CoV) are a wide family of viruses that can cause a variety of conditions, from the common cold to more serious illnesses. The diagnosis is established by the clinic, laboratory and imaging studies, and for its definitive diagnosis is made by means of PCR in nasopharyngeal swab. Currently, there is no specific treatment, but an exhaustive investigation of the use of corticosteroids in the early phase of COVID 19 has been carried out, obtaining positive results, since it reduces the inflammatory response.

KEYWORDS : 2019-nCoV, Pneumonia, Corticosteroids, Treatment

INTRODUCTION

Coronavirus is a virus that belongs to the coronaviridae family, the same that are enveloped ribonucleic acid (RNA) viruses. Currently, several types of coronaviruses have been identified that can infect humans, of which SARS-CoV-2, belonging to the betacoronavirus genus, is responsible for causing 2019-nCoV. Currently declared a pandemic, to date there is no specific treatment; which frequently causes many of the infected patients to develop acute lung damage and an inflammatory response that can cause death.⁴

There is evidence to suggest that acute lung damage is associated with activation of circulating immune cells,

including T cells and the cytokines they produce, and that the early stage of lung damage would be caused by the immune system.⁵

Therefore, there is a need to evaluate different therapies that can help reduce the inflammatory response initiated by SARS-CoV-2. Regarding the use of corticosteroids, the WHO 2019-nCoV clinical guidelines do not recommend them. However, corticosteroids have been widely used in other respiratory infections such as SARS, MERS or Influenza; and corticosteroids are currently being used in some countries as the treatment of patients infected with acute phase 2019-nCoV, with favorable results.^{6,7}

Thus, we present the case of a patient affected by 2019-nCoV, who was treated with corticosteroids in the early phase of the disease and evolved favorably.

METHODOLOGY

This is a retrospective study, a case of a patient diagnosed with COVID pneumonia is reported, 19 highlighting the use of systemic corticosteroids in the early stages of the disease, obtaining favorable responses.

The information and images obtained belong to the medical personnel in charge of the case whose reinforcements rest in the statistical package Excel, Word and JPG

CASE PRESENTATION

This is a 75-year-old male patient, born in Tungurahua and resident in Quito, Ecuador, married, a driver profession, with a personal pathological history of allergic rhinitis 5 years ago in treatment that does not specify. Patient reports that for approximately 10 days he has presented a cough with a brownish expectoration in a moderate amount, having as apparent cause being exposed to relatives with flu-like symptoms, accompanied by general malaise and anosmia. In addition, the patient refers to coughing episodes afterwards, presenting nausea that leads to vomiting on multiple occasions, with this symptomatology he goes to this health center.

Upon arrival at the Pneumology service, a Simple Chest Tomography is performed (photo1)

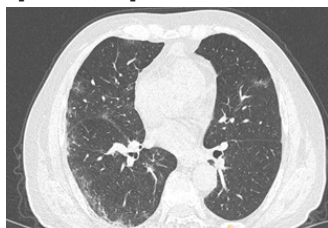


Photo 1. Simple chest CT: ground glass opacity

Extension tests Leukocytes: 6,018, Neutrophils: 76.3%, Lymphocytes: 15.8%, PCR: 5.61, Hemoglobin: 16.60 g / dl Hematocrit: 58.8%, Platelets: 223000, Glucose: 107 mg / dl, Creatinine 0.88 mg / dl, Urea: 26.5 mg / dl, D-Dimer: 612, Ferritin: 885.50, LDH 237, GGT 41 U / l, FA 95 U / l, BT 0.62 mg / dl, BD 0.22 mg / dl, BI 0.40 mg / dl, Na: 136, K: 4.36, Cl: 97, nasopharyngeal swab: SARS-COV-2 Positive PCR.

Due to respiratory symptoms of several days of evolution, for which complementary examinations are carried out, neutrophilia, lymphopenia, in chest tac, opacities in ground glass and positive PCR, SARS-COV-2, are diagnosed. Pneumonia due to COVID-19, therefore treatment regimen with (ceftriaxone, azithromycin, chloroquine, 5/5).

During his hospitalization, he presented two days of fever of 38.5 degrees Celsius, so a dose of paracetamol was prescribed for necessary reasons and it was decided to add methylprednisone for 5 days, after which the patient presented notable clinical improvement with a decrease in cough, he had not returned to record feverish peaks and in the control chest radiograph (photo 2) without pleuropulmonary injury, so a clinical discharge was decided.



Photo 2. Chest radiograph: without pleuropulmonary injury.

DISCUSSION

It is clear that the 2019-nCoV pandemic is taking an unprecedented mark on humanity as incidence and death rates continue to rise sharply.

Healthcare providers face immense pressure to safeguard and treat affected patients, primarily those with existing comorbidities, leading to serious complications. The unforeseen appearance of the 2019-nCoV virus has highlighted that its optimal treatment is scarce, especially in relation to corticosteroid use.⁸

Many health authorities have declared avoiding the use of corticosteroids. However, an article published in the journal "Ecanermedical-science" in March 2020, conducted a study with 250 patients infected with the virus, concluding a great benefit of the use of corticosteroids in the early stage of infection, successfully demonstrating the response early proinflammatory. Without leaving aside its adverse effects. (Viral rebound, replication)^{9,10}

Cochrane Iberoamericano mentions the recommendations proposed by the Chinese Thoracic Scientific Society, the American Thoracic Society and the Surviving Sepsis Campaign, this because there are many clinicians who, despite the contradictory evidence observed in other respiratory infections, consider that corticosteroids could attenuate the uncontrolled inflammatory response that the 2019-nCoV virus causes in some patients, especially in the first phase of infection, in a period where the treatment does not inhibit the immune response.

Thus, the Cochrane Iberoamerican document indicates that the Chinese Scientific Society, regarding the use of corticosteroids in 2019-nCoV mentions: 1) need to assess the risk-benefit balance before offering treatment; 2) that its use should be limited to patients who present hypoxemia or who usually use corticosteroids for some chronic background disease; 3) adult patients with PCR confirmation of the infection, with rapid symptomatic evolution for 10 days and diagnosis of pneumonia by images; 4) that there is caution in patients with certain conditions, such as diabetes or hypertension, among others, and 5) that treatment should be given in low or moderate doses (methylprednisolone doses between 0.5 and 1 mg / kg per day or equivalent). with a maximum duration of 7 days.¹¹⁻¹²

Thus, the objective of this article was to evaluate the efficacy in relation to the use of corticosteroids in the treatment of patients with 2019-nCoV, reporting a recovered clinical case.

CONCLUSION

Systemic corticosteroids are not generally recommended and must be assessed on an individual basis. Despite the conflicting results in the literature and pending clinical trials to assess the impact of treatment in patients with COVID-19, there are many clinicians who believe that corticosteroids may have a role in alleviating the uncontrolled inflammatory response. that the virus causes in some patients after the first phase of the infection, after a few days in which the treatment could suppress the immune response. For this reason, we present a case of a patient treated with corticosteroids in the acute phase of the disease, obtaining a favorable clinical response after the use of corticosteroids. However, as it is a new disease, there should be more reliable studies to assess the efficacy and safety of the use of corticosteroids in patients with early-stage COVID-19.

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