

ANALYSIS OF CASES OF PATIENTS DIAGNOSED BY SARS- COV-2, WITH AND WITHOUT CHRONIC- DEGENERATIVE PATHOLOGIES

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Abstract: The first case or index case of COVID-19 in Mexico was detected on February 27, 2020 in Mexico City. It was a Mexican who had traveled to Italy and had mild symptoms. **Objective:** Identify the established treatment, the evolution, outcome of the clinical picture and the relationship of the comorbidities of the patients admitted with a confirmed diagnosis, during the COVID 19 pandemic. **Material and methods:** Observational, descriptive, cross-sectional and retrospective study. **Result:** Based on the diagnostic methods and tests carried out prior to admission to the COVID area, 61% of the patients had PCR, 37% entered the area with a COVID-compatible computed tomography method prior to a corroborating laboratory. **Conclusion:** A total of 41 patients with confirmed diagnoses of SARS COV2 61% were hospitalized.

Keywords: Analysis, covid-19, SARS-COV-2.

INTRODUCTION

The first case or index case of COVID-19 in Mexico was detected on February 27, 2020 in Mexico City, after which infections were registered in the rest of the republic and the first confirmed case was reported in the state of Campeche. on March 23, 2020, and from there the epidemiological curve went up.

Mexico is the second country with the largest obese population worldwide, and the sixth worldwide in prevalence of diabetes mellitus, comorbidities that influence the outcome of a patient infected with COVID-19, and it is being a new strain of coronavirus, with a different behavior, where the basis of treatment is symptomatic, because there is no specific drug to treat this disease, it is important to analyze the evolution of the guidelines and treatments proposed by organizations such as the WHO, with the treatment that was established as that the pandemic was advancing in the Campeche

clinic sanatorium. Taking into account the outcome, comorbidities among other factors that are explained below in the work.

In December 2019, an outbreak of severe pneumonia cases began in the city of Wuhan, Hubei province, China. Initial epidemiological studies showed that the disease spread rapidly, that it behaved more aggressively in adults between 30 and 79 years of age, with an overall mortality of 2.3%.¹

Most of the first cases corresponded to people who worked or frequented the *HuananSeafoodWholesaleMarket*, a seafood market, which also distributed other types of meat, including that of wild animals, traditionally consumed by the local population (2,3).

The use of deep sequencing methods, which do not require prior information about the agent being sought, as well as isolation in cell culture, followed by electron microscopy and deep sequencing, demonstrated that it was a new viral agent, belonging to the group of coronaviruses, and was initially named 2019-nCoV (2019 novel coronavirus), genetically related to, but distinct from, the SARS agent(1,3,4).

The outbreak spread rapidly in number of cases and in different regions of China during the months of January and February 2020. (1,3).

The disease, now known as COVID-19(of English, *Coronavirus disease-2019*), continued to spread to other Asian countries and then to other continents

On March 11, 2020, the World Health Organization (WHO) declared the occurrence of the COVID-19 pandemic, urging all countries to take action and unite control efforts in what appears to be the greatest emergency in the global public health of modern times. 11

ETIOLOGICAL AGENT

The severe acute respiratory syndrome virus type-2 (SARS-CoV-2), which causes COVID-19, is taxonomically located in the *Coronaviridae* family. (6).

From an eco-epidemiological point of view, they can be classified into two groups: community-acquired coronaviruses (or human coronaviruses, HCoV) and zoonotic coronaviruses.

Human coronaviruses circulate freely in the population of all continents, usually causing mild respiratory disease.(7,8).

It is estimated that they produce between 10% and 30% of cases of the common cold.

In contrast, zoonotic coronaviruses circulate transiently but can generate large epidemics of severe respiratory disease. (9).

Medically important coronaviruses, including human coronaviruses, appear to be zoonotic in origin.

In particular, zoonotic beta coronaviruses are phylogenetically related to bat coronaviruses, which could have been their source to humans, either directly or through an intermediate host. (4,7,10).

The World Health Organization (WHO) used the term 2019 novel coronavirus to refer to a coronavirus that affected the lower respiratory tract of pneumonia patients in Wuhan, China on December 29, 2019(11, 12, 13)

The WHO announced that the official name of the 2019 novel coronavirus is coronavirus disease (COVID-19)(13). And the current reference name for the virus is severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). A group of patients with pneumonia of unknown cause was reported to have been linked to a local Huanan South China seafood market in Wuhan, Hubei province, China in December 2019 (14)

VIRAL REPLICATION

Upon reaching the target cell, the S protein binds to the receptor on the cell, angiotensin-converting enzyme 2 (ACE2). The S protein is then cleaved by a cellular protease (TMPRSS2) into two subunits, S1 and S2. The S1 subunit contains the receptor-binding domain (RBD, from English, *ReceptorBindingDomain*), while the S2 subunit contains the peptide for cell membrane fusion (3,10).

After its entry into the cell, through the formation of an endosome, the virus is unwrapped and the viral RNA is released into the cytoplasm, to initiate translation in the ribosomes. Of the ORF genes 1a and 1b in their proteins, which carry out the replication of the viral genome. The structural proteins encoded towards the 3' end are translated from mRNAs transcribed from the negative-sense strand that is formed during replication of the viral genome.

These structural proteins are subsequently assembled with the viral genome, in the internal cell membranes of the endoplasmic reticulum and Golgi apparatus, forming new viral particles.

Finally, the vesicles containing the new virions fuse with the cell membrane to release the virus outside the cell, a process called exocytosis(3,15-16)

According to the WHO, case definitions are established as follows (17).

METHOD DESCRIPTION

Observational, descriptive, cross-sectional and retrospective study carried out at the Campeche Sanatorium and Clinic, with patients admitted with a confirmed diagnosis, during the COVID 19 pandemic from March to December at the Campeche Sanatorium and Clinic. After the review of the files carried out in the Sanatorium and Clínica Campeche, by the head of the investigation, the collection of data from patients admitted with a confirmed

diagnosis, during the COVID 19 pandemic, conducting a survey in which the data of the patients and this way, obtain the necessary data, this through the relevant format to carry out the study

FINAL COMMENTS

SUMMARY OF RESULTS

Based on the diagnostic methods and tests performed prior to admission to the COVID area, 61% of the patients had PCR, and 37% entered the area with a COVID-compatible computed tomography method prior to a corroborating laboratory. Immunoglobulin tests were performed in only 2%, since they have less predictive value. (Graph 1).

Of 41 patients hospitalized in the COVID area; 9 of them had ages between 50-59 years, being the ages of the patients with the highest level of contagion, on the contrary, only 2 patients with ages between 15-20 years presented. (Graph 2)

Of the 100% of patients admitted to the COVID area, 24% were women, with the highest percentage being men with 76%. (Graph 3).

Of 41 patients admitted to the COVID area, 36 patients had long-standing chronic degenerative diseases, with arterial hypertension being one of the most frequent chronic degenerative diseases, followed by type II diabetes mellitus, as well as obesity in 8 of the patients. patients. (Graph 4)

Of 41 patients, only 12% of them presented complications, which led them to require management with assisted mechanical ventilation; The remaining 88% did not present complications, only symptomatic management and oxygenation through nasal prongs being necessary. (Graph 5)

Of 12% of intubated patients, arterial hypertension was the most predominant chronic degenerative disease in patients. (Graph 6).

Most of the patients were admitted to the Covid area in a period of 4 to 6 days, with only two patients requiring a prolonged period of hospitalization. (Graph 7).

Regarding the months with the largest number of patients admitted to the COVID area, the months of June and May have been registered, with 15 and 11 admissions per month respectively; having March and October as the months with the lowest number of admitted patients. (Graph 8).

Regarding the management of medications, those used in the majority of patients were taken into account; Azithromycin being the most widely used drug, followed by ceftriaxone. (Graph 9)

The outcome of the clinical picture 53% of patients were discharged due to improvement at home, 32% moved to another institution and 12% due to death. (Graph 10).

CONCLUSIONS

A total of 41 patients with confirmed diagnoses of SARS COV2 were hospitalized, 61% were diagnosed with PCR, 37% with chest computed tomography and 2% with immunoglobulins. The major comorbidities of these hospitalized patients were systemic arterial hypertension and obesity, the average age was 50 to 59 years of age, 88 percent of the total sample presented a favorable evolution and did not have intubation criteria, 29% of the intubated patients 14% had systemic arterial hypertension, 14% had diabetes mellitus and 14% had a history of positive smoking, the average hospital stay was 6-7 2 patients had prolonged stays of 19-24 days in relation to the established treatment, the most used drugs were ceftriaxone 34 of 41 patients were prescribed azithromycin and 36 of 41 patients used it. Ivermectin was used in 10 patients who were mainly those starting in the month of March to June. The month with the most hospitalized patients was July

with 15 patients. The outcome of the clinical picture 53% of patients were discharged due to improvement at home, 32% moved to another institution and 12% due to death.

RECOMMENDATIONS

The general recommendations of the WHO and the health authorities include the following protective measures against the COVID-19 disease:

- Frequent hand washing with soap and water or with an alcohol-based disinfectant to eliminate viruses.
- Maintain a minimum distance of 1 meter from anyone who coughs or sneezes.
- Avoid touching your eyes, nose and mouth.
- Cover your mouth and nose with your bent elbow when coughing or sneezing, or use disposable tissues to do so and throw them away immediately.
- If respiratory symptoms occur, avoid close contact with other people.
- If you begin to notice symptoms related to COVID-19, call the numbers authorized by each autonomous community to receive medical advice and follow the instructions indicated. If symptoms worsen or there is a feeling of gravity accompanied by shortness of breath, call 911.
- Do not leave home except for what is essential (work in essential services, buy food or medicine) during the time established by the Government through the State of Alarm.

The aim is to convey a message of encouragement to the entire population, and remember the importance of strictly complying with the confinement measures decreed in order to stop the transmission of the virus. Also, remember the importance of staying informed about the recommendations

provided by the health authorities to collaborate together in the fight against the COVID-19 pandemic.

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