# Clinical Characteristics and Mortality of an Initial Cohort of COVID-19 Patients in México City

Castillo-Álvarez J.L., Barragán-Reyes A., Bay-Sansores D., Pulido-Enríquez J., González-Ramírez L.H., Cabrera-Ruíz M.L., Aguilar-Zapata D, Reyes-Mar J., Aleman-Aguilar E.,Soto-Ramírez L.E., Castañeda-Méndez P

Department of Infectious Diseases and Hospital Epidemiology Unit, Fundación Clínica Médica Sur, México City, MX.

Médica Sur
Excelencia médica, calidez humana

## Introduction

Throughout history, infectious diseases have been a great challenge to public health on multiple occasions, and some of the protagonists of the last 2 decades have been members of the coronavirus family. In December 2019, a new coronavirus outbreak, now known as SARS-CoV-2, was first identified in Wuhan City, China; Since then it has spread to almost all countries, causing the COVID-19 pandemic, which encompasses a wide range of specific characteristics. As of today, more than 5,000,000 people have been infected and around 335,000 of them have lost their lives.

In the context of our country, the first confirmed case was on February 28, 2020. Currently, more than 26,000 confirmed cases and more than 2,500 deaths have been reported, varying the distribution in regions but finding the majority of cases in the center of the republic, specifically in Mexico City[1]. In the present study, we seek to report the characteristics and evolution of patients in a third-level care hospital in the south of Mexico City.

## Methodology

We conducted a case series of patients with the diagnosis of severe pneumonia due to SARS-CoV-2 virus admitted to Médica Sur hospital, between March 14th and May 4th, 2020. Médica Sur is a tertiary level care private hospital in México City, certified by the Joint Commission International (JCI) and member of the Mayo Clinic Care Network.

We used patient's data from electronic medical records. Data collected included demographic information, comorbidities, clinical presentation, and outcomes.

Demographic information included age, and gender. We divided the comorbidities in cardiovascular disease, renal disease, cancer, metabolic disease, immunosuppression, and others. Regarding clinical outcomes, we measured the need of admission to Intensive Care Unit (ICU), death during hospitalization, discharge, and patients that remain hospitalized to the time of this review. ICU, floor unit and total hospitalization length was also documented.

As clinical manifestations we included fever, cough, headache, dyspnea, pharyngodynia, diarrhea, and rhinorrhea.

## References

1. Lippi G, Mattiuzzi C, Sanchis-Gomar F, Henry B. Clinical and demographic characteristics of patients dying from COVID-19 in Italy versus China. Journal of Medical Virology. 2020;.
2. Richardson S, Hirsch J, Narasimhan M, Crawford J, McGinn T, Davidson K et al. Presenting Characteristics, Comorbidities, and Outcomes Among 5700 Patients Hospitalized With COVID-19 in the New York City Area. JAMA. 2020;.
3. Guan W, Ni Z, Hu Y, Liang W, Ou C, He J et al. Clinical Characteristics of Coronavirus Disease 2019 in China. New England Journal of Medicine. 2020;382(18):1708-1720.
4. Piva S, Filippini M, Turla F, Cattaneo S, Margola A, De Fulviis S et al. Clinical presentation and initial management critically ill patients with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection in Brescia, Italy. Journal of Critical Care. 2020;58:29-33.
5. Lei S, Jiang F, Su W, Chen C, Chen J, Mei W et al. Clinical characteristics and outcomes of patients undergoing surgeries during the incubation period of COVID-19 infection. EClinicalMedicine. 2020;21:100331.
6. Grasselli G, Zangrillo A, Zanella A, Antonelli M, Cabrini L, Castelli A et al. Baseline Characteristics and Outcomes of 1591 Patients Infected With SARS-CoV-2 Admitted to ICUs of the Lombardy Region, Italy. JAMA. 2020;323(16):1574.

## Results

31 of 85 (36.5%) patients were diagnosed with critical disease, whereas 54 of 85 (63.5%) were classified as non-critical. In the 31 critically ill patients, the length of invasive mechanical ventilation was 13 days [range {2-45}]; 5 patients (16.1%) required tracheostomy. The mean of mechanical ventilation prior to tracheostomy was 19.8 days [range {14-25}].

In all patients, the total length of hospitalization was 12.1 days [range {2-52}], 14.8 days [range {3-52}] in ICU patients, and 6.7 days [range {2-30}] in floor unit patients. No readmissions were documented.

Global mortality was 4.7% (9.6% in ICU, 1.8% in floor unit). Of the 4 deceased patients, 3 presented comorbidities (75%), while 1 was previously healthy, documenting massive pulmonary embolism as the cause of sudden death.

85 patients were included, median age 53.5 years; 69.4% were male. Most common clinical manifestations at admission were fever (61, 71.8%), cough (29, 34.1%), headache (25, 29.4%) and dyspnea (22, 25.9%). Most common comorbidities were overweight (44/82, 53.6%), obesity (25/82, 30.5%), hypertension (18, 21.2%), and diabetes (17, 20%).

31 of 85 (36.5%) patients were diagnosed with critical disease, whereas 54 of 85 (63.5%) were classified as non-critical. In the 31 critically ill patients, the length of invasive mechanical ventilation was 13 days [range {2-45}]; 5 patients (16.1%) required tracheostomy. The mean of mechanical ventilation prior to tracheostomy was 19.8 days [range {14-25}].

**Table 1. Clinical characteristics**

| | No. (85) | (%) |
|---|---|---|
| Fever | 61/85 | (71.8) |
| Cough | 29/85 | (34.1) |
| Headache | 25/85 | (29.4) |
| Dyspnea | 22/85 | (25.9) |
| Pharyngodinya | 16/85 | (18.8) |
| Diarrhea | 10/85 | (11.8) |
| Rinorrhea | 8/85 | (9.4) |

**Table 2. Hospitalization and outcomes**

| | No. | (%) |
|---|---|---|
| **Hospital admittance** | | |
| Intensive Care Unit | 14/85 | (16.5) |
| Floor unit | 71/85 | (83.5) |
| **Intrahospital transfer** | | |
| ICU to floor unit | 13/85 | (15.3) |
| Floor unit to ICU | 17/85 | (20) |
| **Clinical resolution** | | |
| Hospitalized | 32/85 | (37.6) |
| Discharge | 46/85 | (54.1) |
| Transfer to another hospital | 3/85 | (3.5) |
| Death | 4/85 | (4.7) |
| **Patients' clinical status** | | |
| Critical | 31/85 | (36.5) |
| Non-critical | 54/85 | (63.5) |
| **Ventilatory support procedures** | | |
| Tracheostomy | 5/31 | (16.1) |
| Mean of previous days before tracheostomy | 19.8 | (14-25) |
| **Invasive Mechanical Ventilation requirement** | **Mean** | **(Range)** |
| Tracheal intubation days, mean | 13 | (2-45) |
| **Hospital stay** | **Mean** | **(Range)** |
| Hospital stay, total | 12.1 | (2-52) |
| ICU stay | 14.8 | (3-52) |
| Floor unit stay only | 6.7 | (2-30) |

*ICU: Intensive Care Unit*

## Conclusion

In the present study, we had a predominantly middle-aged male population, fever being the major clinical sign at admission. More than half of the patients were overweight, concurring with previous reports from different cohorts[2-4] of this characteristic being identified in the majority of patients who required intensive cares, now considered as a predisposing factor to develop severe disease.

Most of the patients were admitted to the floor unit and only a small part of them required direct admission to the intensive care unit (ICU). Mortality in patients who required intensive care at some point of their stay was lower than reported in other studies[5]. In addition, those who were transferred from the ICU to floor unit were discharged due to clinical improvement.

The average length of stay in ICU or floor unit followed the same trend seen in other hospital centers around the world[6], which leads us to believe that the behavior of COVID-19 is similar in Latin patients compared with other cases series.

This descriptive study offers characteristics and outcomes of hospitalized Latin-American patients with COVID-19 infection in Mexico City.