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Clinical and laboratory characteristics of patients with COVID-19 hospitalized in intensive care in a locality in Venezuela

Características clínicas y de laboratorio de pacientes con COVID-19 hospitalizados en cuidados intensivos de una localidad de Venezuela

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A B S T R A C T

COVID-19 is a disease that has a varied clinical spectrum from asymptomatic to severe symptoms. Because it is an emerging disease, the continuous contribution of clinical and epidemiological data is convenient for public health. The objective of this research work was to describe the clinical and laboratory characteristics of patients with COVID-19 in intensive care in a Venezuelan region for which there is no information in this regard. The study, a short report, was descriptive and prospective of patients with COVID-19 hospitalized in an intensive care unit, whose sample was 27 patients in whom the following were described: age, sex, clinical parameters, pathological history, laboratory results, radiological tests and hospitalization data. The findings reveal that the most affected were 52.8±18.6 years old, with a body mass index of 23.1±4.3, diabetic and hypertensive, with abnormal liver enzymes and parameters such as: LDH, CRP, Bun, D-dimer and glycemia, SaO_2 of 70 % and in tachypnea. It is concluded that advanced age is an important risk factor, as well as diabetes mellitus and arterial hypertension. That the SaO_2 is less than 90 % in those with poor clinical evolution, with a predominance of the bilateral ground glass radiological pattern and alteration of liver enzymes (towards an increase), as well as for LDH, CRP, fibrinogen, BUN, D-dimer, glycemia and leukocytes.

Keywords: COVID-19, risk factors, signs and symptoms, laboratory, public health

R E S U M E N

El COVID-19 es una enfermedad que tiene un espectro clínico variado desde asintomático a cuadro severo. Por ser una enfermedad emergente conviene a la salud pública el aporte continuo de datos clínicos y epidemiológicos. El objetivo de este trabajo de investigación fue describir las características clínicas y de laboratorio de pacientes con COVID-19 en cuidados intensivos de una región venezolana de la cual no se tiene información al respecto. El estudio, un reporte corto, fue de tipo descriptivo y prospectivo de pacientes con COVID-19 hospitalizados en una unidad de cuidados intensivos, cuya muestra fueron 27 pacientes en quienes se describieron: edad, sexo, parámetros clínicos, antecedentes patológicos, resultados de laboratorio, pruebas radiológicas y datos de hospitalización. Los hallazgos revelan que los más afectados tenían 52,8±18,6 años de edad, índice de masa corporal de 23,1±4,3, eran diabéticos e hipertensos, con alteración de las enzimas hepáticas y de parámetros como: LDH, PCR, BUN, Dímero D y glicemia, SaO_2 de 70 % y en taquipnea. Se concluye que la edad avanzada es un importante factor de riesgo, así como la diabetes mellitus e hipertensión arterial. Que la SaO_2 es inferior a 90 % en aquellos con mala evolución clínica, con predomino del patrón radiológico de vidrio esmerilado bilateral y alteración de las enzimas hepáticas (hacia el incremento), al igual que para LDH, PCR, fibrinógeno, BUN, dímero D, glicemia y leucocitos.

Palabras clave: COVD-19, factores de riesgo, signos y síntomas, laboratorio, salud pública.

INTRODUCTION

The SARS-CoV-2 coronavirus causes COVID-19, an emerging disease considered by the WHO as a pandemic due to its rapid expansion since it was reported in Wuhan, capital of Hubei province (China) and the first major health challenge public in the 21st century. It is a disease that has an average incubation period of 5,2 days, which generally presents with cough, dyspnea, myalgia, dysgeusia, anosmia, and gastrointestinal symptoms such as diarrhea and emesis, but it is a pathology that has a varied clinical spectrum, from asymptomatic to severe picture. The evolution in COVID-19 is favorable for the majority of patients (with mild [80 %] or moderate [15 %] disease), however, 5 % of these require hospitalization with a high probability of progress towards the syndrome of respiratory distress, multiple organ failure and even death (2.3 %) [1-6].

In COVID-19, clinical radiological dissociation is also common, so that clinical deterioration and worse prognosis are generally sudden, that is, severe disease and death associated more frequently with advanced age (mortality greater than 14 % among those aged 70 and over), comorbidity (arterial hypertension [AHT], diabetes, chronic obstructive disease, heart disease, asthma and obesity), tobacco use and laboratory abnormalities such as: elevated D-dimer (cut-off point of 1 ng/mL), lactate dehydrogenase (>350 UI/L) and ferritin (>1000), lymphopenia (<800) and positive troponin [5, 7-10].

Because COVID-19 is an emerging disease, it is convenient for global public health to provide clinical and epidemiological data that define its behavior at the level of each country and the largest number of localities or regions that comprise it, information from of vital importance for the establishment of socio-sanitary control plans and programs, especially in low-income countries and with evident underreporting in epidemiological data, therefore, the objective of this short report or progress report on further research in the field focuses in describing the clinical and epidemiological factors of patients with COVID-19 disease who are admitted to the intensive care unit of the main hospital in the Trujillo municipality, Trujillo state, Venezuela**.**

METHODOLOGY

This is a descriptive and prospective study carried out until the year 2021 of patients with COVID-19 who required hospitalization in the intensive care unit (ICU) of the Dr. José Gregorio Hernández Hospital "in the Trujillo municipality, Trujillo state, Venezuela. Patients who tested positive for any of the confirmatory tests (antigen or genomics) for SARS-CoV-2 were included in the study. In total, 27 patients were selected. After explaining the objectives of the research, informed consent was obtained from each of the participants or their legal representatives.

A database was created in Excel® for the collection of information related to age, sex, clinical parameters, pathological history, laboratory results, radiological tests, and hospitalization data. The patients were grouped into four groups, namely: moderate cases, severe cases, survivors and deceased, since they define prognosis and allow statistical analysis with the variables of interest for the investigation.

For the analytical tests (the majority were processed in the laboratory of the “Dr. José Gregorio Hernández hospital”) the blood sample was collected by venipuncture of the brachial blood vessel in three different tubes: one with EDTA anticoagulant for blood cell count; another tube with sodium citrate for the study of prothrombin time, partial thromboplastin time and D-dimer; and the last tube with lithium heparin for plasma analysis of biochemical parameters. The nasopharyngeal sample was obtained with swabs in molecular medium for RT-PCR for SARS.CoV-2 and sent to a reference laboratory for processing.

Statistic analysis

Descriptive statistics of the absolute (frequency and percentages) and continuous (mean and standard deviation) values were performed. For the

comparison between the groups, parametric tests such as Student's t were used for variables with normal distribution and the Mann-Whitney test. (non-parametric) for those that do not have it, while the chi-square test was used for nominal data. The effects have been considered significant with $p<0.05$. Statistical analysis was performed with the statistical package SPSS 17.01®.

RESULTS

The average age among the patients with COVID-19 was 52.8±18.6 years, the youngest was 15 years old and the oldest 77, with a significant difference ($p<0.0001$) among those considered severe cases (with a mean 54.8 years old) and moderate (28 years old on average), but not between survivors and deceased ($p=0.0741$). Those of the female gender represented 51.9 % of the sample, of these only 2 women were moderate cases, with no evident statistical difference between genders and the surviving and deceased groups ($p=0.6949$, $p=1.0$). The deceased were 48.1 % (13/27, $p=0.7855$ in relation to the survivors). Body mass index (BMI) was 23.1 % ± 4.3, with no significant difference between the variables reviewed. Diabetes mellitus (6/27[22.2 %]) and hypertension (4/27[14.8 %]) were the most frequent comorbidities among those studied (**Table 1**).

Table 1. Demographic, clinical data, and pathological history of patients with COVID-19 hospitalized in the ICU of the Trujillo municipality, Trujillo state, Venezuela
Tabla 1. Datos demográficos, clínicos y antecedentes patológicos de pacientes con COVID-19 hospitalizados en la UCI del municipio Trujillo, estado Trujillo, Venezuela

Characteristic	Total n= 27	Moderate n=2	Serious n=25	p	Survivor n= 14	Deceased n=13	p
Age in years, mean (STD)	52,8(18,6)	28,0(8,5)	54,8 (17,8)	0,0001	46,1 (19,5)	60,0(15,2)	0,0741
Gender, n (%)							
Male	13,0(48,1)	0,0	13,0(52)	0,0000	7,0(50)	6,0(46,2)	0,6949
Female	14,0(51,9)	2,0 (100)	12,0(48)	0,0002	7,0(50)	7,0(53,8)	1,0
BMI, mean (STD)	23,1 (4,3)	21,9(0,3)	23,2(4,4)	0,7843	23,0(3,7)	23,2(5,1)	0,9668
Pathological history, n (%)							
Mellitus diabetes	6,0(22,2)	0,0	6,0(24)	0,0005	2,0(14,3)	4,0(30,8)	0,2482
HBP	4,0(14,8)	0,0	4,0(16)	0,0016	2,0(14,3)	2,0(15,4)	1,0
Obesity (BMI> 30 Kg/m^2)	3,0(11,1)	0,0	3,0(12)	0,0082	1,0(7,1)	2,0(15,4)	0,4142
Lymphocytic leukemia	1,0(3,7)	0,0	1,0(4)	0,1573	1,0(7,1)	0,0	0,1573
Covid-19	1,0(3,7)	0,0	1,0(4)	0,1573	1,0(7,1)	0,0	0,1573
None	12,0(44,4)	2(100	10,0(40)	0,0011	7,0(50)	5,0(38,5)	0,4142

STD: standard deviation, BMI: body mass index, HBP: arterial hypertension.

The patients had an average of 5.1 ± 5.5 days after the onset of symptoms and they lasted hospitalized in the ICU for 11.0 ± 11.1 days without significant differences between any of the groups. Most of the cases were between medium and high risk, with significant differences between the sum of both and low risk in the New score ($p<0.0001$), with significant differences for high risk between moderate and severe cases ($p< 0.0000$) and between deceased and survivors ($p<0.5$). The average in terms of vital signs was: 89.9 ± 27.7 beats per minute of heart rate (HR), 33.2 ± 10.3 breaths per minute of respiratory rate (RR), 70.5 ± 19 0.7 % oxygen saturation (SaO_2), systolic blood pressure (SBP) 125±10.3 mmHg, diastolic blood pressure (DBP) 77.8±14.8 mmHg, 94.4±19.6 mmHg mean arterial pressure (MAP) and temperature 36.0±6.9 °C. There is only evidence of a significant difference in SaO_2 between moderate and severe cases (**Table 2**):

Table 2. Clinical and hospital characteristics of patients with COVID-19 hospitalized in the ICU of the Trujillo municipality, Trujillo state, Venezuela
Tabla 2. Características clínicas y hospitalarias de los pacientes con COVID-19 hospitalizados en la UCI del municipio Trujillo, estado Trujillo, Venezuela

Characteristic	Total n=27	Moderate n=2	Serious n=25	p	Survivor n=14	Deceased n=13	p
Onset of symptoms, mean (STD)	5,1(6,5)	2,5(2,1)	5,4(6,7)	0,1445	4,3(4,4)	6,1(8,4)	0,4299
Days of hospitalization in ICU, mean (STD)	11,0(11,1)	3,0(0,0)	11,7(11,3)	0.0013	14,8(13,3)	7,0(5,1)	0.0181
Score on admission (New), n (%)							
Low risk*	7,0(25,9)	2,0 (100)	5,0(20)	0.1088	5,0(35,7)	2,0(15,4)	0,1088
Medium risk	9,0(33,3)	0,0	9,0(36)	0.002	6,0(42,9)	3,0(23,1)	0,1573
High risk	11,0(40,7)	0,0	11,0(44)	0.0000	3,0(21,4)	8,0(61,5)	0,033
Vital signs during hospitalization in the ICU							
HR	89,9(27,7)	84,5(24,7)	90,4(28,3)	0,5281	87,3(31,4)	92,8(24,0)	0,5622
RR	33,2(10.3)	24,0(2,8)	34,0(10,4)	0,0633	33,5(8,3)	32,9(12,5)	0,9171
SaO_2	70,5(19,7)	96,5(0,7)	68,5(18,9)	0,0021	73,2(24,5)	67,7(13,1)	0,5123
SBP	125,2(10,3)	119,5(7,8)	120,2(25,4)	0,949	126,1(17,1)	113,8(30,0)	0,2614
DBP	77,8(14,8)	80,0(0,0)	77,6(15,4)	0,822	81,3(9,4)	74,0(18,8)	0,4074
MAP	94,4(19,6)	91,0(1,4)	94,6(20,4)	0,7086	101,4(17,8)	86,8(19,2)	0,1323
Temperature	36,0(6,9)	36,0(0,0)	36,0(7,2)	1,0	36,0(0,1)	35,9(0,3)	0,9867

STE: standard deviation, UCI: intensive care unit, HR: heart rate, RR: respiratory rate, SaO_2: blood oxygen saturation, SBP: systolic blood pressure, DBP: diastolic blood pressure, MAP: mean arterial pressure.
Chi-square: p<0.0001 with a significant difference between the sum of medium and high risk and the low risk category in the New score.

The predominant radiological pattern was the classic one for COVID-19 with 59.3% (16/27), with significant differences between severe (15/27) and moderate (0/27) cases (p<0.0000), it was also the statistical difference between survivors (4/27) and deceased (12/27) (p<0.5) was clear. The pO2 (oxygen partial pressure) was 55.9±18.9 mmHg, the pCO2 (carbon dioxide partial pressure) 30.4±14.6 mmHg, the PaO2/FiO2 (arterial oxygen pressure/fraction of inspired oxygen) did not exceed 100 mmHg and lactate was 1.8±0.5 mmol/L. There are significant differences in PaO2/FiO2 between moderate and severe cases (p<0.0000). Regarding blood chemistry, significant differences can be seen in aspartate transferase (moderate vs severe cases, p<0.0000), in alanine transferase (moderate vs severe cases, p<0.0000 and among deceased survivors, p<0.05). Total and fractionated bilirubin values are within the reference values. LDH (lactate dehydrogenase) far exceeds the normal value, settling at 406.2±188.7 U/L, with significant differences between severe (354.6±193.9 U/L) and moderate cases (251,0±60,8 U/L) (p<0.0000) and between survivors (286.7±142.7 U/L) and deceased (411.8±215.2 UL) (p<0.0000) (**Table 3**). C-reactive protein (CRP) was 47.6±51.5 mg/dL and the difference between severe (50.2±52.7 mg/L) and moderate (15.5±10.6 mg/L) cases is significant. (P<0.0000), and between survivors (61.1±61.2 mg/dL) and deceased (33.1±35.3 mg/dL). Creatinine registers slightly above its normal value (1.5±1.6 mg/dL). Blood uremic nitrogen (BUN) remained above normal (48.2±33.4 mg/dL) only with significant differences between severe and moderate cases (p<0.05). The sodium (Na^+) and potassium (K^+) electrolytes did not show significant alterations. Glycemia was 207.3±100.9mg/dL, with differences between severe (214.6±101.2 mg/dL) and moderate (116.0±32.5 mg/dL) cases (p<0.0000), and between survivors (189.6±92.4 mg/L) and deceased (266.4±109.8 mg/dL) (p<0.0000) (**Table 3**).

Table 3. Radiological pattern and laboratory tests of patients with COVID-19 hospitalized in the ICU of the Trujillo municipality, Trujillo state, Venezuela. 2021
Tabla 3. Patrón radiológico y pruebas de laboratorio de pacientes con COVID-19 hospitalizados en la UCI del municipio Trujillo, estado Trujillo, Venezuela. 2021

Characteristic	Total n=27	Moderate n=2	Serious n=25	p	Survivor n=14	Decesaed n=13	p
Radiological pattern, n (%)							
Pattern not Covid-19	3,0(11,1)	0,0	3,0(12,0)	0,0143	2,0(14,3)	0,0	0,0455
Classic Pattern (frosted glass)	16,0(59,3)	0,0	15,0 (60,0)	0,0000	4,0(28,6)	12,0(92,3)	0,0047
Indeterminate pattern	8,0(29,6)	2,0(100)	7,0(28,0)	0,0184	8,0(57,1)	1,0(7,69)	0,001
Arterial blood gases, mean (STD)							
pO_2	55,9(18,9)	47,5(0,7)	56,6(19,5)	0,2072	57,1(21,2)	54,6(16,8)	0,738
pCO_2	30,4(14,6)	25,3(4,6)	30,0(15,1)	0,3714	31,7(18,2)	28,9(9,8)	0,611
PaO_2/FiO_2	80,6(50,6)	138,5(123,7)	75,9(42,8)	0,0000	84,1(48,4)	76,8(54,5)	0,4157
Lactate	1,8(0,5)	1,6(0,2)	1,9(0,5)	0,8206	1,9(0,5)	1,8(0,4)	0,9414
Blood Chemistry, average (STE)							
SGOT	70,7(88,1)	23,5(0,7)	74,5(90,6)	0,0000	66,5(67,8)	75,2(108,6)	0,3013
SGPT	161,2(39,0)	16,5(0,7)	46,1(39,8)	0,0000	55,4(50,1)	31,5(16,2)	0,0003
TB	0,8(0,6)	1,0(0,6)	0,8 (0,6)	0,8330	0,7(0,4)	0,9(0,7)	0,8231
DB	0,5(0,4)	0,7(0,5)	0,5(0,4)	0,7963	0,6(0,3)	0,5(0,5)	0,8927
IB	0,3(0,3)	0,3(0,1)	0,3(0,3)	1,0	0.3(0,3)	0,4(0,3)	0,8658
LDH	406,2(188,7)	251,0(60,8)	354,6(193,9)	0,0000	286,7(142,7)	411,8(215,2)	0,0000
CRP	47,6(51,5)	15,5(10,6)	50,2(52,7)	0,0000	61,1(61,2)	33,1(35,3)	0,0000
Creatinine	1,5(1,6)	0,9(0,0)	1,6(1,6)	0,5312	1,1(0,6)	1,9(2,1)	0,5136
Bun	48,2(33,4)	30,7(8,0)	49,6(34,3)	0,0029	42,9(18,7)	53,9(44,4)	0,1138
Na^+	143,o(28,6)	149,0(5,7)	142,5(29,7)	0,5903	137,6(39,1)	148,7(7,1)	0,3535
K^+	2,7(0,6)	2,4(0,1)	2,7(0.6)	0,851	2,8(0,6)	2,7(0,6)	0,9519
Glucose	207,3(100,9)	116,0(32,5)	214,6 (101,2)	0,0000	189,6(92,4)	266,4(109,8)	0,0000
Complete blood count, average (STE); n (%)							
Leukocytes	13774,8(9588,0)	11650,0(1202,1)	15329,8(9923,9)	0,0000	12701,1(7767,0)	17594,6(10971,5)	0,0000
Segmented	83,0(10,8)	82,5(0,7)	83,8(11,3)	0,8866	84,1(11,2)	83,2(10,8)	0,9216
Lymphocytes	16,4(13,1)	17,5(0,7)	16,1(13,6)	0,7	15,0(11,5)	17,5(15,0)	0,5351
Platelets	238307,7(84819,4)	264000,0(65053,8)	236480,0(86943,0)	0.0000	223857,1(96118,4)	254307,7(71121,2)	0,0000
Hemoglobin	12,3(1,7)	11,2(0,5)	12,3(1,7)	0,7483	12,2(1,9)	12,2(1,6)	1,0
Coagulation profile							
Fibrinogen	382,2(170,7)	276,5(208,6)	390,7(169,6)	0,0000	347,4(145,1)	419,8(193,4)	0,0002
D-dimer	9,1(17,6)	0,05(0,05)	9,8(18,1)	0,0000	9,3(21,1)	9,0(13,7)	0,9210
PT	13,1(2,1)	13,0(0,1)	13,1(2,2)	0,9779	13,2(2,6)	12,9(1,4)	0,9338
APTT	31,0(3,7)	29,3(1,8)	31,1(3,8)	0,7433	31,4(5,1)	30,5(1,3)	0,8715

UCI: intensive care unit, pO_2: oxygen partial pressure, pCO_2: carbon dioxide partial pressure, PaO_2/FiO_2: arterial oxygen pressure/fraction of inspired oxygen, SGOT: aspartate aminotransferase, SGPT: alanine aminotransferase, TB: total bilirubin, DB: direct bilirubin, IB: indirect bilirubin, LDH: lactate dehydrogenase, CRP: C reactive protein, BUN: blood uremic nitrogen, PT: prothrombin time, APTT: partial thromboplastin time.

Hemoglobin was 12.3±1.7 g/dL. Leukocytes exceed 13,000 cells/µL in severe cases (15,329±9,923.9 cells/µL) and deceased (17,594.6±10,971.5 cells/µL) ($p<0.0000$). Platelets are within normal limits, that is, between 150,000-400,000 cells/µL. Fibrinogen was above the reference range in the deceased (419.8±193.4 mg/dL) with a significant difference with the resulting survivors ($p<0.001$). D-dimer was 9.1±17.6 µ/mL and 9.8±18.1 µ/mL in severe cases (significant differences compared to moderate ones, $p<0.0000$). The prothrombin and partial thromboplastin times were within normal limits (**Table 3**).

D I S C U S S I O N

This research paper describes the demographic, clinical, laboratory test, x-ray, and comorbidity characteristics of patients with COVID-19 hospitalized in the intensive care unit of the main hospital in the Trujillo municipality, Trujillo state, Venezuela, the first of its kind to be held in the country. The deceased in this study are those who are 60 years of age or older, that is, the oldest. This finding coincides with numerous studies, since age is considered a predisposing factor for serious illness that requires admission to the ICU, since that with increasing age, immune fragility and the presence of chronic diseases are also exacerbated. The mortality rate found (48.1 %) is within the expected range [4, 7, 11-16].

The male gender has been considered the most frequent in cases of COVID-19 that have required hospitalization, however, in this investigation it was not possible to determine different prevalences in both genders, even clinical deterioration led the two groups to higher figures similar rates of death, perhaps this result is attributable to the smallness of the sample or to the marked tendency of women to seek medical attention more zealously than men, due to cultural beliefs and social behavior of not showing themselves vulnerable, especially evident in Andean regions and those dedicated to agricultural work, geographic and economic aspects that define the municipality where this research work was carried out [3, 7,13, 14].

Diabetes mellitus and hypertension (due to myocardial damage and rhythm disturbances, due to direct viral involvement or secondary inflammation derived from the cytokine storm that leads to damage to the microvascular system, activation of the of the coagulation cascade and inhibition of fibrinolysis), without a doubt, already identified as independently responsible for the poor evolution and clinical deterioration of patients with SARS-CoV-2 infection, but chronic obstructive pulmonary disease that occurs with inflammation of the lung parenchyma, limitation of expiratory airflow and greater susceptibility to infection are not part of the comorbidities of these patients with COVID-19 [11,17-19]. The good immune response is associated with previous contacts with the SARS-CoV2 coronavirus, this seems to be true in this study, since the case with a history of COVID-19 survived. Obesity is the third pathological history that affects patients, another of the previously described independent factors of poor prognosis (in some cases as the main factor), however, the average BMI does not exceed 24 Kg/m^2, so it can be deduced that the worst evolution is linked to extreme weight and not only to obesity [5, 20].

The onset of symptoms was an average of 5.1 ± 6.5 days, so hospitalization was late, that is, when hypoxemia was severe. The days of hospitalization were 11.0±11.1 days (an intermediate hospital stay [between 5 and 17 days]), the length of stay differs from those reported by other authors. The risk of mortality and disease was perfectly established with the New score, since those affected with a fatal outcome were located in the medium and high ranges, this in agreement with previous investigations. Oxygen saturations equal to or less than 90 % are related to poor clinical evolution and the outcome may be death. In this case, the average SaO2 was 70.5 ± 19.7 % and even the lowest were found in the group of deceased, with disorder of the acid-base balance as shown by the results

obtained in the determination of arterial gases (with a $PaO_2/FiO_2 \leq 100$). Hence, low oxygenation values allow predicting subsequent clinical deterioration. Tachypnea was present in all hospitalized patients and slightly higher in cases considered severe, which was expected since, due to its constant and invariable presence, it has been included in the severity scales for COVID-19 [16, 21, 22].

The ground glass pattern and bilateral lung involvement was the most reported among those with COVID-19, an increase in liver enzymes (SGOT and SGPT) was also observed (due to an increase in acute phase reactants that generate liver dysfunction), the LDH, CRP, BUN, fibrinogen, D-dimer, glycemia, and leukocytes. This last parameter is accompanied by lymphopenia, probably due to translocation of peripheral blood lymphocytes to the lungs. Despite the fact that these aspects have been previously reported, it is suggested to carry out continuous evaluations of the cut-off points of the laboratory parameters in order to establish really precise diagnostic and prognostic criteria. Thrombocytopenia, which defines most of the works on clinical, laboratory and prognostic characteristics, is not evidenced in this report, since the values were always within the normal range [17, 22-26].

Finally, although it is not reported in the tables, the most frequent complications during the stay in the ICU were septic shock and acute renal failure, associated according to the world scientific literature with higher mortality. This work suffers from the following limitations, but which in no way detract from its quality: the small size of the sample and the non-inclusion of all health centers for the diagnosis and care of patients with COVID-19 in the municipality [2, 24].

CONCLUSION

It is concluded that advanced age is an important risk factor, as well as a pathological history of diabetes mellitus and arterial hypertension, and that variability in the prevalence of these and other comorbidities indicated as intervening in COVID-19 in the different regions is common and populations. Also that the risk of mortality and disease is adequately established by the New score. That the SaO2 is less than 90 % in those with poor clinical evolution in whom the acid-base imbalance and tachypnea were evident. The bilateral ground glass radiological pattern and the alteration of liver enzymes (towards an increase) prevailed, as well as for LDH, CRP, fibrinogen, BUN, D-dimer, glycemia and leukocytes and finally that the limitations of this study are related to the size of the sample and the non-incorporation of all health centers for the diagnosis and care of patients with COVID-19 in the municipality.

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