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Original Article

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SUMMARY

Epidemics and pandemics are naturally occurring events. The emergence of a new infectious disease always poses a complex situation, especially if it occurs as an epidemic of significant spread or severity. The objective of this study was to describe the clinical and epidemiological characteristics in patients confirmed with COVID-19. A descriptive and retrospective study was conducted on the clinical and epidemiological characteristics of the 161 patients diagnosed with this disease in the Yara municipality of Granma province during the period June 2020-2021. The variables studied were: age, sex, site of infection, presence



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or absence of symptoms and signs, personal medical history, health area, and community council. 60.8% of those affected were female, with 98 patients, and the 30-44 age group was represented by 50 patients (31.0%). In 150 cases, transmission was mostly autochthonous (93.1%) and asymptomatic in 86 cases (53.4%). Of the symptomatic patients, respiratory manifestations were the main symptoms with 70 cases (93.3%), 63 patients had a personal history of high blood pressure (39.1%). The health area that reported the most cases was "Luis Enrique de la Paz" with 106 patients (65.8%) and Yara the most affected popular council with 72 cases (44.7%). The majority of patients were female, autochthonous transmission and asymptomatic presentation predominated. The epidemic in the Yara municipality behaved similarly to the rest of the country.

Keywords: Epidemics; Pandemics; Coronavirus; Infectious diseases; Incubation period infectious diseases.

ABSTRACT

Epidemics and pandemics are naturally occurring events. The emergence of a new infectious disease is always a complex situation, especially when it occurs as an epidemic of significant spread or severity. The aim of this study was to describe the clinical-epidemiological characteristics of patients confirmed with COVID-19. A descriptive and retrospective study was carried out on the clinical-epidemiological characteristics of 161 patients diagnosed with this disease, in the municipality of Yara, province of Granma. The following variables were studied: age, sex, site of infection, presence or not of symptoms and signs, personal pathological antecedents, health area and locality. Out of the total, 98 patients were female (60.8%), and the age group 30-44 years was represented by 50 patients (31.0%). Transmission was generally autochthonous in 150 cases (93.1%), and asymptomatic in 86 cases (53.4%). Among the symptomatic patients, respiratory manifestations were the main symptom in 70 cases (93.3%). Also, 63 patients had a personal medical history of hypertension (39.1%). Luis Enrique de la Paz was the health area that reported the most cases with 106 patients (65.8%), and Yara was the most affected locality with 72 cases (44.7%). The majority of patients were female; and autochthonous transmission and



asymptomatic presentation predominated. The epidemic in Yara municipality behaved alike in the whole country.

Keywords:Epidemics; Pandemics; Coronavirus; Infectious diseases; Incubation period; Infectious disease.

SUMMARY

Epidemics and pandemics are natural events. The emergence of a new infectious disease is always a complex situation, especially if an epidemic of significant extension or severity is formed, with the objective of revealing the clinical-epidemiological characteristics in patients confirmed with COVID-19. A descriptive and retrospective study was carried out on the clinical-epidemiological characteristics of 161 patients diagnosed with this disease, in the municipality of Yara, province of Granma, in the period from June 2020 to 2021, in the various ways studied: age, sex, site of infection, presence or number of symptoms and signs, personal pathological history, area of health and popular advice. Of 60.8% two attacks were of the female sex with 98 patients and the age range of 30 to 44 years was represented by 50 patients (31.0%); In 150 cases, the transmission was predominantly autochthonous (93.1%) and asymptomatic in 86 cases for 53.4%, among the symptomatic for respiratory manifestations, with the main symptoms in 70 cases for 93.3%, 63 patients had a personal history of arterial hypertension (39.1%). The health area with the most recorded cases was "Luis Enrique de la Paz" with 106 patients for 65.8% and Yara, the popular municipality most affected with 72 cases (44.7%), with the majority of two patients being female, with autochthonous transmission and asymptomatic presentation. The epidemic in the municipality of Yara behaved similarly to the rest of the country.

Keywords:Epidemics; Pandemics; Coronavirus; Infectious diseases; Infectious disease during the incubation period.

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Introduction

On December 31, 2019, the Wuhan Municipal Health and Sanitation Commission (Hubei Province, China) reported seven severe cases of pneumonia of unknown etiology to the World Health Organization. (1)

A virus infected a bat, which in turn infected another animal, whose species is still unknown, in a crowded live animal market, which in the English-speaking world is called wet markets, where domestic and wild animals, exotic species, many of them in danger of extinction, are crowded in cages. (2)

The causative agent of this pneumonia was identified as a new virus from the Coronaviridae family, which was later named SARS-CoV-2, a new strain that had not been previously found in humans. (2)

The clinical picture associated with this virus has been characterized by fever, cough, dyspnea, and pneumonic changes on chest X-rays. On January 12, 2020, China released the genomic sequence of the virus that causes COVID-19 disease, and a few days later, it revealed a molecular method for detecting it. (3)

On January 30, 2020, the WHO declared the novel coronavirus an international public health emergency, and as of March 11, due to its spread to 58 other countries in different regions of the world, including the Americas, it was declared a pandemic.

The epicenter, which emerged in China, moved to Europe, mainly to Spain, Italy, Germany, England, and then in April spread to the United States and the Americas, where more than 40% of the pandemic and deaths worldwide have occurred. As of October 31, 2021, 247 million cases and 5 million deaths have been reported. (4)

Since the start of the pandemic on March 11, 2020, more than 952,634 cases have occurred in Cuba, affecting all ages, with more than 83% of them already recovered. 174,192 have been children, with a 99% recovery rate, while the survival rate is 99.9%. (5)



In Granma the epidemic contributed 7,315 cases, of which 350 were imported. (6) During the investigation the authors state that in the Yara municipality 161 cases were reported for the Covid-19 disease, being May 2021 was the month with the highest number of reported cases, with 44 notifications and a rate of 8.01 per 10,000 inhabitants.

The trend of the disease in the study period was upward as the epidemic was established, which is why the study was carried out with the aim of describing the clinical-epidemiological characteristics in patients confirmed with the disease.

Methods

A descriptive and retrospective study was conducted on the clinical and epidemiological characteristics of 161 patients diagnosed with COVID-19 in the Yara municipality of Granma province from June 2020 to June 2021. The aim was to describe the clinical and epidemiological characteristics of patients confirmed with the disease.

Data collection sources included individual medical records, time-series statistical records, and the form for the investigation of suspected and confirmed cases of the novel coronavirus (COVID-19). The variables studied included age, sex, site of infection, presence or absence of symptoms and signs, personal medical history, health area, and community council.

The information was obtained from the Deputy Directorate of Epidemiology of the Municipal Center for Hygiene, Epidemiology, and Microbiology. Summary measures, absolute numbers, percentages, and rates were used for statistical analysis.

Health research takes into account the ethical principles and guidelines established for biomedical research involving human participants. These principles are known internationally as the Nuremberg Code since 1947, the Helsinki Declaration promulgated in Finland in 1964 and later approved at the 18th World Medical Assembly and revised by the 29th in Tokyo; Japan in October 1975, the 35th in Venice; Italy in October 1983, the 41st in

Hong Kong in September 1989, and the 52nd General Assembly in Edinburgh, Scotland in October 2000.

No human subjects were included in the research, so no actions were taken that affected their integrity; only statistical information was processed. However, we are bound by the obligation to maintain confidentiality of the data and results obtained.

Results

When analyzing disease reporting by age, it is clear that in the years studied, the 30-44 age group reported the most cases, with 50 cases, representing 31.05%. Cases of the disease were reported in both sexes, but women were the most affected, with 98 cases (60.87%). (Table 1)

Table 1.Incidence of Covid-19 by sex and age groups.

Groups of ages	Male		Female		Total	
	No	%	No	%	No	%
-1 year	0	0	1	0.62	1	0.62
1-14 years	7	4.35	9	5.60	16	9.94
15-29 years old	15	9.32	20	12.42	35	21.73
30-44 years old	18	11.19	32	19.87	50	31.05
45-59 years old	16	9.93	23	14.29	39	24.22
60-74 years	6	3.72	11	6.83	17	10.56
+75 years	1	0.62	2	1.24	3	1.87
Total	63	39.13	98	60.87	161	100

Fountain:Time series from the Statistics Department. CMHEM Yara.

Regarding the location where the people became ill, autochthonous cases predominated (150 cases) with 93.17%, and of these, 113 became ill within the municipality, representing 70.18%, with a known source of infection (125 cases), all of them contacts of confirmed cases. (Table 2)

Table 2. Site of infection.

Place of infection	No	%	place	No	%
Imported	11	6.83	USA	2	1.24
			Russia	5	3.11
			Bahamas	1	0.62
			Venezuela	2	1.24
			Angola	1	0.62
Natives	150	93.17	Outside the municipality	37	22.99
			In the municipality	113	70.18
Total				161	100

Fountain:Time series from the Statistics Department. CMHEM Yara.

Regarding the presence or absence of clinical symptoms, asymptomatic cases predominated, accounting for 53.41% of cases, with 86 confirmed. Among the 75 symptomatic cases, respiratory symptoms predominated, accounting for 90.06%, followed by malaise and headache, representing 81.98% and 76.39%, respectively. (Table 3)

Table 3. Clinical manifestations.

Clinical manifestations	No	%
Headache	51	68.00
Fever	46	61.33
General malaise	63	84.00
Respiratory manifestations	70	93.33
Sore throat	4	5.33
Loss of taste	8	10.66
Loss of smell	8	10.66
Loss of appetite	7	9.33
Shortness of breath	2	2.66
Decay	4	5.33
Diarrhea	2	2.66
Myalgias	2	2.66
Asymptomatic upon admission	86	53.46

Fountain:Time series from the Statistics Department. CMHEM Yara.

Regarding the personal medical history of confirmed COVID-19 cases, 125 patients reported one or more of these conditions (77.64%). The most common comorbidities were high blood pressure (63 cases) (39.13%), heart disease (45 cases) (27.95%), and bronchial asthma or a history of bronchial allergies (33 cases) (20.49%), respectively. (Table 4)

Table 4.Personal Pathological History.

Personal Pathological Background (APP)	Male		Female		Total	
	No	%	No	%	No	%
NO APP	14	8.70	22	13.66	36	22.36
APP	47	29.20	78	48.44	125	77.64
HBP	13	8.07	50	31.06	63	39.13
Diabetes Mellitus	11	6.83	15	9.32	26	16.15
Bronchial Asthma or Allergy	12	7.45	21	13.04	33	20.49
Cardiovascular diseases	18	11.19	27	16.77	45	27.95
IRC	4	2.49	7	4.35	11	6.83
Cancer	1	0.62	4	2.49	5	3.10
Thyroid diseases	0	0	1	0.62	1	0.62
BIRD	1	0.62	2	1.24	3	1.86
COPD	5	3.10	4	2.49	9	5.59

Fountain:Time series from the Statistics Department. CMHEM Yara.

The incidence of cases by health area and local council shows that the Luis Enrique de la Paz health area reported the highest number of confirmed cases with 106 cases, representing 65.83%, and the Yara local council reported the most cases with 72 cases, representing 44.72%, followed by Veguitas (39 cases) and Cayo Redondo (12 cases), with 24.22% and 7.45% respectively. (Table 5)

Table 5.Incidence of cases by People's Councils.

Health Area	Popular tips	No	%
Luis Enrique de la Paz Reyna	Yara	72	44.72
	The Martí	7	4.34
	Mateo Romas	11	6.83
	Cayo Redondo	12	7.45

	Sofia	4	2.49
Total		106	65.83
Ramón Heredia Umpierre	Veguita	39	24.22
	Galician ox	2	1.24
	The Hawthorn	5	3.10
	The Mahogany	2	1.24
	Paquito Rosales	3	1.88
	The Keys	4	2.49
Total		55	34.17
Grand Total		161	100

Fountain:Time series from the Statistics Department. CMHEM Yara.

Discussion

Since December 2019, humanity has been facing a pandemic caused by a disease called Coronavirus Infectious Disease-19 (COVID-19), caused by the severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) virus that has spread to several countries and is manifested by high morbidity and mortality. (7,8)

In research carried out in Guantanamo by Dr. Martinez Moreira, (9) Dr. Cuello Carballo in Pinar del Rio (10) and Msc. Navarro Pirez (11) in the "Amalia Simoni" Hospital, the female sex predominated, coinciding with the results shown in the research being defended, in contrast to these results in other studies, such as those carried out by Dr. Gonzalez Garcia (12) in Minas de Matahambre, Parra Linares (13) in Artemisa and Barrera Sixto (14) in Pinar del Rio, where the male sex predominated.

The authors consider that women were the most affected, since they are responsible for domestic chores at home and for performing their social role as caregivers for sick people in the family. (15)

A study carried out in Spain indicates that the proportion of men and women is similar (47.4% vs. 52.6%), (3) on this aspect genetic and hormonal causes are proposed to explain the differences in susceptibility according to sex, where some reports justify the lower female susceptibility to infection due to the protection of the extra X chromosome of women in relation to men. (4)

Regarding age, the most affected were those aged 30-44 followed by 45-59 years, this is because they were generally the people most exposed to risk, since they were the ones who had a socially active life in facing the contingency despite the isolation measure implemented in the country. It is important to highlight that in other investigations such as those carried out by Barreras Sixto (14) in Pinar del Río, Dr. González García (12) in Minas de Matahambre and Parra Linares (13) in Artemisa, although it does not coincide with that specific age group, young adults did predominate; in contrast to the results found by Dr. Martínez Moreira (9) in Guantánamo where those over 60 years of age predominated.

An autochthonous transmission of the SARS CoV-2 virus was evidenced, mainly within the municipality; this corresponds to the reviewed studies. (8) The authors of this research infer that this is because the country implemented a protocol to confront the disease, which included measures for action against international travelers, with the purpose of avoiding the introduction of the disease, which significantly influenced the low notification of imported cases. (5,9)

This finding is consistent with the opinion of experts, who affirm the variability of the clinical picture, demonstrating the high number of asymptomatic cases during the epidemic, which constitute a danger for its expansion. In the research, asymptomatic patients contributed the greatest number of cases, the same result was found by Barreras Sixto (14) in Pinar del Río; not so other authors such as Dr. Cuello Carballo (10) in Pinar del Río and Dr. Martínez Moreira (9) in Guantánamo.

The asymptomatic course of the disease predominated in the country according to national reports from the Ministry of Public Health. This contradicts international records, which could be due to the actions implemented, such as the active daily screening of ARI cases and the use of contact isolation centers where asymptomatic individuals were detected. On the other hand, global reports are made due to the arrival of symptomatic patients to health services. (16)

Regarding the clinical symptoms reported, respiratory symptoms predominated, followed by malaise and headache respectively. Studies such as Barreras Sixto(14) in Pinar del Río and Msc. Navarro Pirez(11) in the “Amalia Simoni” Hospital provide similar results, unlike the

study by Dr. Martínez Moreira(9) in Guantánamo and Dr. Cuello Carballo(10) in Pinar del Río in which fever was the main symptom.

The health area that reported the most cases was the one served by the "Luis Enrique de la Paz" Polyclinic. Regarding the political-administrative division of the municipal government into Popular Councils, it was shown that the councils of Yara, Veguitas, and Cayo Redondo, respectively, had the most reported cases. The authors believe this is explained by the fact that these Popular Councils had the largest demographics and were the location of the health centers that treated these patients. These localities were also the ones that maintained the municipality's economic and productive functioning at a low level.

In Cuba, despite the government's efforts, socioeconomic and cultural conditions are not homogeneous across territories, which has been noted may enhance the differentiated risk of COVID-19 and determine the profile of the disease. (17) This is taken into account by local governments to confront the disease and its spread, which has allowed the panorama of the pandemic in the country to differ from other countries, where the disease has been very lethal, so that it is revealed that the ideas of Martínez Hernández and Díaz Canel Bermúdez (18) have been raised, when they expressed that: "to the extent that we all understand the responsibility that each one of us has for each other, we will face the new coronavirus pandemic more efficiently."

Conclusions

The COVID-19 epidemic in the Yara municipality behaved similarly to the rest of the country, demonstrating a predominance of females, young adults, autochthonous and asymptomatic transmission, and a personal history of high blood pressure in reported cases.

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Conflict of interest

The authors declare no conflicts of interest.



Authorship contribution

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