ORIGINAL ARTICLE

Characterization of Covid-19 in Artemisa

Caracterización de la COVID-19 en Artemisa

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ABSTRACT

Introduction: Covid-19 have been affecting the worldwide population for a number of months, Cuba nation and Artemisa province have not been exempt from this situation.
Objective: to characterize Covid-19 confirmed-positive cases in Artemisa province.
Methods: an observational, descriptive, longitudinal and retrospective research was conducted in patients diagnosed with Covid-19 in Artemisa province up to July 18th, 2020. Data were collected from the Department of Statistics in Artemisa province, and from the daily reports published by the Ministry of Public Health of Cuba in its official website. Descriptive statistics was applied to analyze the data by means of absolute and relative percentage frequencies.
Results: in Artemisa province 2435 tests of Polymerase Chain Reaction (PCR) where analyzed and of them 38 cases were confirmed positive. The rate of incidence respect this disease reached 7,4 per 100 thousand inhabitants. Nine of the eleven municipalities comprising Artemisa province presented confirmed- positive cases, Bauta added 31,6 % of the provincial accumulation. The 76,3 % of confirmed-positive cases were contact of other infected people. The 97,4 % of the infected the patients recovered and one patient died. The 55,26 % of confirmed- positive patients were male.
Conclusions: the novel coronavirus represents a great challenge for Artemisa province. When the research concluded it was verified that the clinical characteristics of these 38 Covid-19 patients, behaved similar to the rest of the infected patients in Cuba: the disease prevailed in male sex.

Keywords: COVID-19; Coronavirus Infections; Incidence; Virus; Patient.

RESUMEN

Introducción: desde hace varios meses la COVID-19 afecta a la población mundial, situación de la cual tanto Cuba, como la provincia Artemisa no han quedado exentas.
Objetivo: caracterizar los casos positivos a la COVID-19 en la provincia Artemisa.
Métodos: se realizó una investigación observacional, descriptiva, longitudinal y retrospectiva en los pacientes diagnosticados con la COVID-19 en la provincia Artemisa hasta el 18 de junio de 2020. Los datos fueron obtenidos mediante el departamento de estadística de la provincia, los partes diarios publicados por el Ministerio de Salud Pública de Cuba y su sitio web oficial. Se empleó la estadística descriptiva para el análisis de los datos, mediante frecuencias absolutas y relativa porcentual.
Resultados: se realizaron en la provincia Artemisa 2 435 pruebas de Reacción en Cadena de la Polimerasa y 38 casos resultaron positivas. La tasa de incidencia de la enfermedad fue de 7,4 por cada 100 mil habitantes. Nueve de los once municipios artemiseños presentaron casos; Bauta aportó el 31,6 % del acumulado provincial. El 76,3 % de los casos confirmados fueron contactos de casos confirmados. El 97,4 % de los infectados se recuperaron y un paciente falleció. El 55,26 % de los pacientes confirmados fueron del sexo masculino.
Conclusiones: el nuevo coronavirus representa un ingente desafío para la provincia Artemisa. Se constató, al finalizar la investigación, que en los 38 pacientes positivos a la COVID−19, las características clínicas eran análogas a los infectados del resto de Cuba: mayor predominio de la enfermedad en el sexo masculino.

Palabras claves: COVID−19; Infecciones Por Coronavirus; Incidencia; Virus; Paciente.

INTRODUCTION

For millennia, human beings have been victims of diseases and plagues that have caused numerous deaths: leprosy, the Black Death (bubonic plague), the plague of Orosius, the plague of Antoninus, which lasted several years and is mentioned as the cause of Galen's flight from the city of Rome, among others.[1]

In the month of December 2019 the *Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2)* began to affect the Chinese province of Hubei, specifically its capital, the city of Wuhan, which became the epicenter of a pneumonia outbreak of unknown causes.[2] The virus crossed the borders of the Asian giant and spread throughout the world.

As of June 18, COVID-19 was reported in 185 countries, with 8,318,370 confirmed cases and 4,477,735 deaths, for a case fatality rate of 5,39 %. In the Americas, 4,098,241 cases were positive-confirmed for the virus, with 2, 12399 deaths and a case fatality rate of 5,18 %. Brazil continued to be the epicenter of the pandemic in South America, with 955 377 confirmed cases and 46 510 deaths.[3]

On March 11, 2020, the first 3 confirmed-positive cases of COVID-19 were reported in Cuba, corresponding to three Italian tourists.[4] The number of people infected by the new coronavirus continued, gradually, reaching a crescendo. According to the report on the website of the Ministry of Public Health (MINSAP),[5] by the end of June 18, a total of 2305 people were reported positive for SARS-CoV-2 in Cuba, 2037 medical discharges had been approved and the number of deaths amounted to 85 people.

Artemisa province ranks the tenth place in the country by number of inhabitants with a population of 512 110 inhabitants in 2019.[6] The first confirmed-positive case was reported on March 20, 2020, a 52-year-old citizen of the People's Republic of China, a worker from Mariel Special Development Zone.[7] His symptoms were detected and he was promptly referred to Pedro Kourí Tropical Medicine Institute, where he progressed satisfactorily. From that date on, the number of infected persons in Artemisa gradually increased.

However, thanks to the care and protection of the highest authorities of the territory, the virus did not exacerbate more viciously its power in our region. Due to the national epidemiological situation, as well as the international panorama, it is necessary to study the disease in different scenarios to determine its natural history and the associated factors. The present research was developed with the objective of characterizing the patients diagnosed with Covid-19 in Artemisa province until June 18, 2020.

METHODS

An observational, descriptive, longitudinal and retrospective research was carried out on patients diagnosed with COVID-19 in Artemisa province between March 20, 2020 and June 18, 2020. The target group comprised 38 confirmed-positive patients, working with the totality of them.

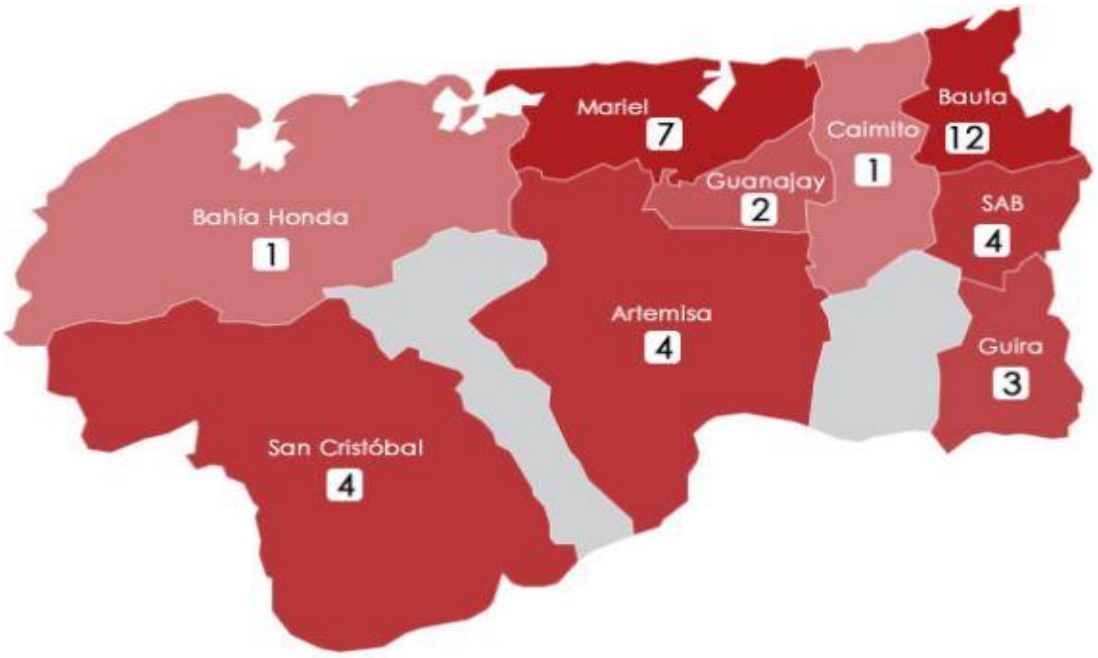
Data were collected from the Department of Statistics in Artemisa province, and from the daily reports published by the Ministry of Public Health of Cuba in its official website. Variables such as age, sex, municipality of residence and source of infection were studied. The data were stored in a database created for this purpose. Descriptive statistics were used for data analysis, using absolute and relative percentage frequencies.

Confidentiality of the personal data of patients was kept, and the principles of autonomy, respect for individuals and the principle of beneficence and non-malfeasance were respected. The basic principles of the Declaration of Helsinki, which contains the recommendations to be followed in biomedical research on human beings, were respected. Informed consent was requested from the patients. In addition, the Ethics Committee and the Scientific Council of the institution approved the study.

RESULTS

Up to June 18, 2020, there were performed 2435 Polymerase Chain Reaction tests (PCR) in Artemisa province, a total of 38 positive cases were reported, which represented 1,6 % of those reported in Cuba up to that date. The incidence rate of the disease was 7,4 per 100,000 inhabitants.

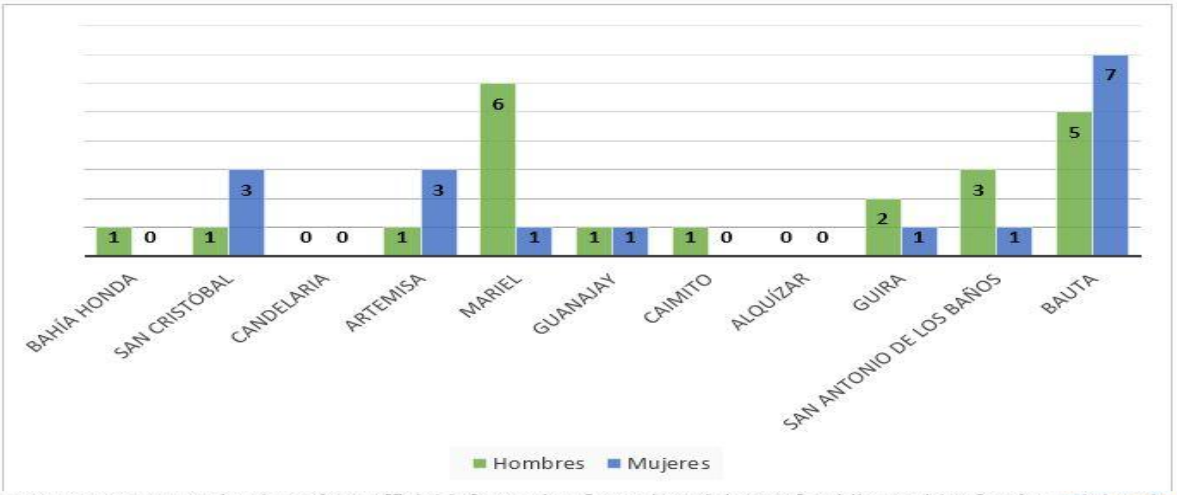
Nine of the eleven municipalities of Artemisia had cases up to complete the research, with Candelaria and Alquizar municipalities remaining without positive cases. (Fig. 1) The municipality of Bauta accounted for 31,6 % of the provincial total, followed by Mariel with 18,4 % of the total number of accumulated positive patients.



Source: Own preparation based on official information from the Ministry of Public Health of Cuba

Fig. 1 Distribution by municipalities of Covid-19 confirmed-positive cases in Artemisa province up to June 18, 2020

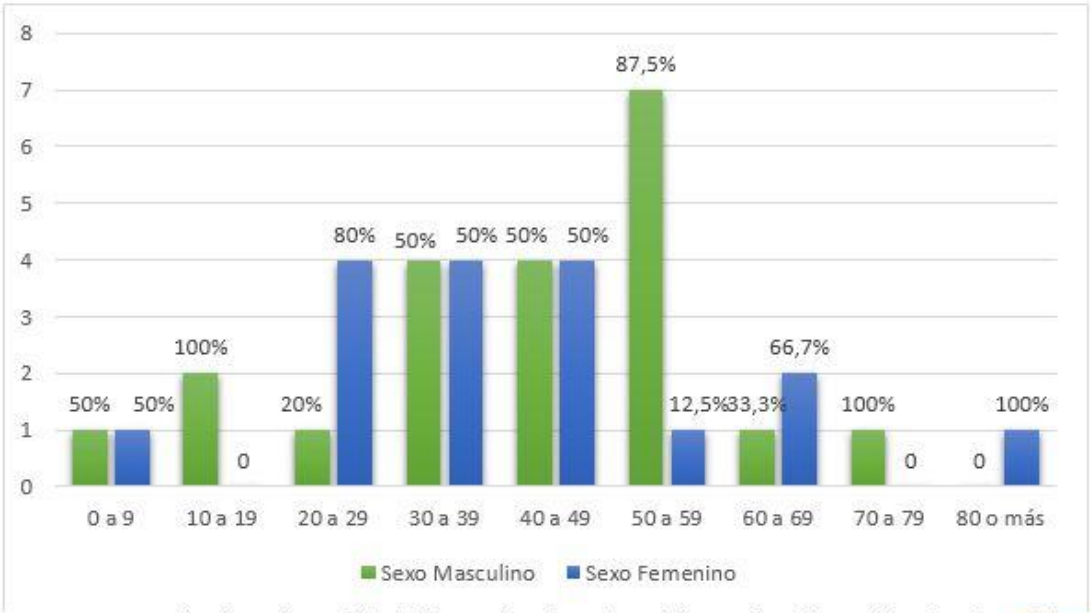
The patients in the province coming from abroad represented the 18,4 %: five (5) people from China, Peru (1) and from Panama. (1) Of those infected, 97,4 % recovered and one patient tested positive. The sources of infection of Covid-19 positive cases in Artemisa were as follows: infection outside the country 4 (10,5 %); contact of confirmed cases 29 (76,3 %) and of unknown source 5 (13,2 %). Of the confirmed patients, 55,26 % were male and 44,74 % were female.



Source: Own preparation based on official information from the Ministry of Public Health of Cuba- Ministerio de Salud Pública de Cuba

Fig. 2 Distribution by sex of the confirmed-positive cases for COVID-19.

An analysis by age range shows that in Artemisa there was a predominance of male patients (55,3 %); the age group 50-59 years registered the largest population in the male sex with 87,5 %. The 30-39 and 40-49 age groups registered values of 50 % in both sexes. (Fig. 3)



Source: Own preparation based on official information from the Ministry of Public Health of Cuba- Ministerio de Salud Pública de Cuba

Fig. 3 Artemisa population pyramid of those confirmed with COVID-19

For the control of Covid-19 in Artemisa, 10 institutions were opened and ready to provide clinical and epidemiological surveillance of persons who might carry the disease. These sites have the material resources and basic health equipment to monitor the vital signs of patients, and also to maintain strict compliance with hygienic measures. Since the arrival of the province in the first phase of recovery, 3 institutions continued as isolation centers.

DISCUSSION

Since the World Health Organization (WHO) declared Covid-19 a pandemic on March 11, 2020, the new coronavirus has become a new epidemic for humanity. For a whole year, the disease has been battled, long and painfully, for a whole year.

In Cuba, the first three cases were detected on March 11, 2020, and on the 20th day of the same month, the first COVID-19 confirmed-positive case was reported in Artemisa province. The clinical epidemiological behavior of the confirmed-positive cases was similar to that of the rest of the Cuban provinces.

Up to the conclusion of the study, on May 19th, 2020, more than 2,400 Polymerase Chain Reaction Tests (PCR) had been performed in Artemisa territory, confirming a total of 38 positive cases of Covid-19. The highest percentage of infected persons affects the age groups between 30 and 59 years old, with a predominance of male patients (55,26 %). The sources of Covid-19 infection in the province are similar to those of the rest of the nation, with contact infection of confirmed cases standing out (76,3 %).

According to several studies carried out by Cuban researchers, the clinical epidemiological behavior of the disease behaves itself in a similar way in all the provinces of the Greater Island of Antilles. Estrada García et al,[8] in a research carried out in Granma province expressed that, between March and May 2020, the sex most affected by Covid-19 was male (53,8 %), and the age group with the highest incidence was 20 to 49 years old, similar to what happened in Artemisa territory, however, the same does not occur with the mode of contagion: in the eastern province, only 18 % corresponds to contacts with positive cases, a lower figure than that of Artemisa province.

In Santiago de Cuba province, thanks to a study carried out between March and May 2020 on 74 patients confirmed with COVID-19, it was found that male patients predominated (52,7 %).[9] This situation shows that, two months after the report of the first confirmed-positive cases in Cuba, the situation has been similar to what is happening in Artemisa. There are several reports that justify the lower female susceptibility to infection; since the beginning of the pandemic there has been explored the possible resistance to the virus of female sex. It is hypothesized that the low susceptibility of women to viral infections may be due to the protection of the extra X chromosome that they present in comparison with men.[10]

Data compiled by the World Health Organization (WHO) show that the elderly are the population group most affected by the coronavirus. The pathologies associated with the disease (hypertension, diabetes mellitus, chronic obstructive pulmonary disease, bronchial asthma, and ischemic heart disease) are of great interest because they make it possible to predict whether the patient could develop a severe form of the disease. LodixiCobas et al [11] state in an article published in 2020, "In studies carried out in patients who died with COVID-19, in the 92,9 % of the cases there were associated pathologies, with hypertension being the most frequent one".

As of May 31 of May 12 patients infected with Covid-19 had died in Villa Clara province; 11 of them, representing 91,7 %, were over 60 years of age.[12]

For this reason, protective measures must be strictly respected and complied with in order not to spread the infection: good hand hygiene, covering the nose and mouth when coughing and sneezing, avoiding close contact with any person showing signs of respiratory disease, social distancing, among others. It is incumbent upon all of us to strictly abide by the laws; only in this way will we be able to face the damage caused by the virus against which no vaccine has been found to cure it.

The president of the Provincial Defense Council (CDP), Gladys Martínez Verdecia,[13] expressed that: "Each administration has the responsibility to demand compliance with hygiene measures and the use of facemask, but must evaluate the performance of its function, adjusted to the new stage". On this aspect, the Minister of Public Health of our nation, José Ángel Portal Miranda [14], stated that: "We are all participants in the definitive flattening of the contagion curve, and that the great battle to be fought now is against new outbreaks of the disease".

The role played by the active survey carried out in our province by students of medical sciences and other health workers has contributed, to a great extent, to avoid a greater spread of the disease. The School of Medical Sciences of Artemisa, before the Covid-19, has played a decisive role as a house of high studies within the provincial healthcare system and has been decisively integrated to the strengths of the provincial health system, whose principles are based on:

- Primary Health Care as the first line of defense for people's health.

- Coverage of health services in all municipalities of the territory.
- Mass organizations have acted during the research process as mobilizers of the population whenever required.
- To have a network of health care institutions that maintained clinical and epidemiological surveillance of people who could carry the disease.

It is responsible if equanimity and calmness are maintained. The best way to face the virus is not to be afraid of it. We must hand over to future generations a world where hope is not a chimera, but embodies reality.

CONCLUSIONS

The novel coronavirus represents an enormous challenge for Artemisa province. During these first ninety days of pandemic in Artemisa territory, the active survey for suspected cases and their immediate isolation to prevent the transmission of the virus has been of vital importance. It was found, at the end of the investigation that in the 38 confirmed positive patients to Covid-19, the clinical characteristics were similar to those infected in the rest of Cuba: greater predominance of the disease in male sex. Having a free healthcare system and maintaining an inclusive social policy are strengths that our territory has to face the negative impact of Covid-19.

Contribution of the Authors

EPL**:** basis, investigation, daily statistical data storage (active, hospital discharge cases and deceased), creation of graphs and revisions. CLP: basis, investigation, preparation of the manuscript (writing of the original draft), presentation of data, revisions and editions.

Conflict of Interests

The authors completed the form of the declaration of conflict of interests for the ICMJE, and they declared no financial support have been given to the writing of the published article; not having financial relations with organizations that could have interests in the published article and not having other relations or activities that could influence on the published article.

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Additional Material

It can consult himself additional material to this article in their available electronic version in: www.revcmpinar.sld.cu/index.php/publicaciones/rt/suppFiles/4642

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