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Behavior of the outbreak of the COVID-19 pandemic in Pinar del Río

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RESUMEN

Introduction: Pinar del Río province has presented a complex epidemiological situation since the beginning of the outbreak of Covid-19. Objective: to characterize the behavior of the outbreak of the pandemic by COVID - 19 in Pinar del Río. Methods: an observational, descriptive and cross-sectional study, with a population of 623 patients which were positive to Covid-19 and their contacts (7 725) during the months of October and November of 2020, was carried out. Theoretical, empirical and statistical methods were used. Results: the municipalities with greater number of positive cases were Pinar del Río with 243 (39.0 %), Consolación del Sur with 143 (22.9 %) and Guanes with 124 (19.9 %). The male sex was the predominant with 384 cases (61.6 %); as well as the 19 to 39 age group with 225 (36.1 %); the greatest number of asymptomatic patients were in Pinar del Río with a 30.8 %, followed by Consolación del Sur with a 20.2 % and Guanes with a13.0 %. Most of the contacts of COVID -19 cases were reported in Pinar del Río (2 788 contacts which represent a 36.0 %), Consolación del Sur (1 922 contacts accounting for a 24.8 %) and Guanes (1 089 ones for a 14.0 %). The positive contacts to COVID - 19 predominated in Pinar del Río with 212 (40 %), Consolation del Sur with 115 (21.6 %) and Guanes with106 cases (10, 1%). Conclusions: The outbreak of the pandemic by COVID-19 in Pinar del Río showed a similar behavior to the one of the rest of the country and has coincident points with the pandemic at world-wide level.

Keywords: Coronavirus; Covid-19; Pandemic; Sprout again.

On December 31, 2019, the authorities of the People's Republic of China reported several cases of pneumonia of unknown etiology to the World Health Organization (WHO) in Wuhan, a city located in the Chinese province of Hubei. A week later they confirmed that it was a new coronavirus that had been called SARS-CoV-2 and the disease it causes has been called "coronavirus disease 2019" (COVID-19). This disease causes vaRíous clinical manifestations, including respiratory symptoms that range from the common cold to severe pneumonia with respiratory distress syndrome, septic shock, and multi-organ failure[1,2].

Transmission in the incubation peRíod by asymptomatic people has been described. It is transmitted through respiratory droplets (> 5 microns) when patients cough, speak or sneeze[3].

The current complex epidemiological situation in Pinar del Río province since the beginning of the outbreak of COVID-19 in October of this year,with the highest incidence rate per 100,000 inhabitants in the country, has led to Hygienic reinforced sanitary measures while others have been added. These measures were dictated by the Ministry of Public Health and by the Provincial and Municipal Defense Councils, to confront this pandemic [4].

The objective of this research was to characterize the behavior of the outbreak of the COVID-19 pandemic in Pinar del Río during the months of October and November 2020.

METHODS

Type of study: an observational, descriptive cross-sectional investigation was conducted on the behavior of the COVID-19 pandemic outbreak

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Conflict of interests
The authors do not declare any conflict of interest.

in Pinar del Río during the months of October and November 2020.

Universe and sample: the study universe consisted of 623 confirmed patients to COVID-19 and their 7,725 contacts during the outbreak of the COVID-19 pandemic in Pinar del Río, between October 6 and November 11, 2020.

Variables and data collection: the variables taking into were confirmed cases [it was considered confirmed, yes or no, according to a positive result to the reverse transcriptase polymerase chain reaction (RT-PCR)], municipality (the municipality of origin of the patients), sex , asymptomatic cases (it was considered yes or no, according to the presence or absence of symptoms at the time of diagnosis), age group, contacts of confirmed cases (it was considered yes or no, to persons contacts of confirmed cases of COVID-19 by RT-PCR), contacts of confirmed cases with RT-PCR positive to COVID - 19 (it was considered yes or no to confirmed patients of COVID-19 with positive RT-PCR who were contacts of positive cases).

The data were compiled from the Statistical Register of the Provincial Health Directorate of Pinar del Río.

Statistical processing: a database was created in Microsoft Excel, in which the data reported daily by the statistical departments of the 11 municipalities of the province were extracted. Descriptive statistics, absolute and relative percentage frequencies were used.

Ethical standards: the research was presented and approved in the provincial scientific health council and was based on the principles of medical ethics. Its results will be published in prestigious events and magazines.

RESULTS

The municipalities with the highest number of confirmed cases were Pinar del Río with 243 (39 %), followed by Consolación del Sur, with 143 cases (22.9 %) and Guane with 124 (19.9 %). (Figure 1).

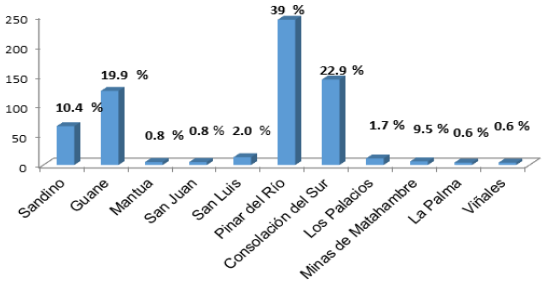
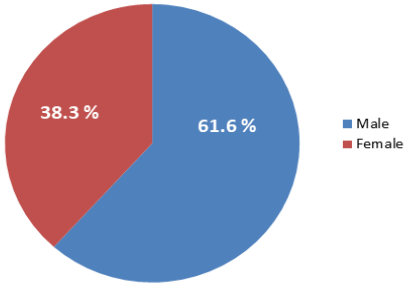


Figure 1. Distribution of confirmed COVID-19 cases by municipalities. Pinar del

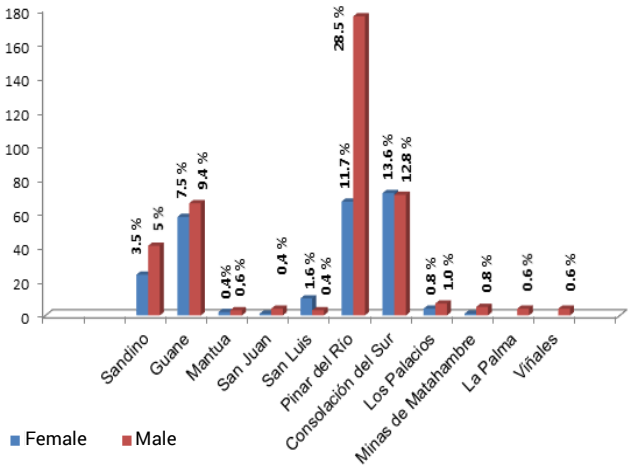
Male predominance was observed with 384 cases (61.6 %). (Figure 2).



N = 623

Figure 2. Distribution of confirmed COVID-19 cases according to sex

The number of asymptomatic cases predominated in Pinar del Río municipalities with 192 cases, 56 of the female sex (11.7 %) and 136 of the male sex (28.5 %) while in Consolación del Sur there were 126 cases, 65 cases (13.6 %) of the female sex and 61 (12.8 %) of the male sex. (Figure 3).



N = 623

Figure 3. Distribution of asymptomatic cases according to sex and municipality.

There was a predominance of cases in the group between 19 and 39 years of age, (225 cases for a 36.1 %) in Pinar del Río municipality (243 for a 39 %) and in the male sex with 384 cases (61.6 %). (Table 1).

Pinar del Río municipality presented the highest number of contacts of confirmed cases with 2 788 (36 %), followed by Consolación del Sur with 1 922 (24.8 %) and Guanes with 1 089 (14 %). (Figure 4).

There was a predominance of Contacts of confirmed cases to COVID-19with positive RT-PCR in Pinar del Río municipality with 212 (40%), Consolación del Sur with 115 cases (21.6 %) and Guanes with 106 cases (10, 1 %). (Figure 5).

Table 1. Distribution of confirmed cases according to age groups and sex by municipalities

Municipalities / Sex	Age group 0-18 F	0-18 M	19-39 F	19-39 M	40-59 F	40-59 M	60 and more F	60 and more M	Total
Pinar del Río	10	13	18	74	27	73	12	16	243
Consolación del Sur	9	15	24	21	23	20	17	14	143
Guane	6	10	22	25	21	17	8	15	124
Sandino	3	4	10	18	9	12	2	7	65
San Luis	2	0	4	0	3	2	1	1	13
Los Palacios	0	3	1	1	1	2	2	1	11
Minas de Matahambre	1	3	0	0	0	1	0	1	6
Mantua	1	0	1	3	0	0	0	0	5
San Juan	0	4	0	0	0	0	1	0	5
La Palma	0	2	0	1	0	0	0	1	4
Viñales	0	0	0	2	0	2	0	0	2
Total	32	54	80	145	84	129	43	56	623

N=623

Source: Statistical register. Health Provincial Directorate. Pinar del Río

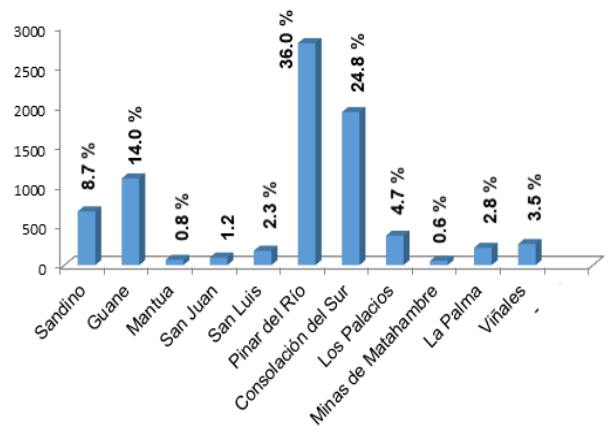


Figure 4. Distribution of contacts of confirmed COVID-19 cases by municipalities

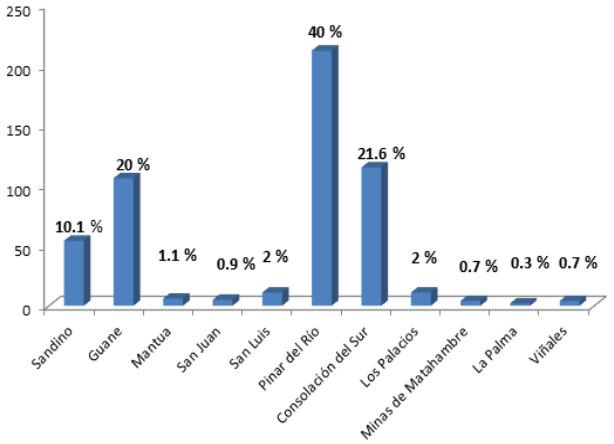


Figure 5. Contacts of confirmed cases to COVID-19with positive RT-PCR

DISCUSSION

Since the beginning of the outbreak of the pandemic in the province, the municipalities of Pinar del Río, Consolación del Sur and Guanes have been reporting the highest number of confirmed cases, the number of contacts of confirmed positive cases and the number of asymptomatic cases at the time of diagnosis.

A retrospective cohort with a sample of 41 confirmed COVID-19 patients in the city of Wuhan, China, showed that the average age was 49 years old, with a male prevalence5; it coincides with this series in terms of sex and not with age, where the prevailing group was between 19-39 years old, and this could be related to the sociodemographic characteristics of each region.

The results of the report of the National Center of Epidemiology of Spain show similarities with those obtained in this research, with respect to the highest incidence of the disease in males; although it specifies that the previous factsprevailed at the beginning

of the pandemic and later the proportion changed in favor of women[6].

Palacios et al.[7] stated that the shortage of information by gender limits theorizing about the probabilities of association between sex and susceptibility to the virus.

Guzmán et al. [8] reported in terms of sex, that from 0 to 19 years of age and from 60 years and over, the people who have been ill are essentially men, while the other age groups have a greater female representation.

Serra [9] in his study draws attention to the fact that women show most signs of vulnerability, an aspect that he considered vital to continue studying for the design of future policies. These results did not coincide with those obtained in this research, in which male patients predominated.

Calvo et al.[10] worldwide reported a low incidence in the pediatric population in general, with a milder clinical picture. According to the hospital series published so far, a high proportion of the adult patients admitted and almost all the deceased had comorbidities.

It is important to take into account the behavior of symptomatic and asymptomatic patients, since, above all, the asymptomatic population in Cuba is young. In the relationship between masculinity and femininity, the case of symptomatic patients is practically similar, although infections in asymptomatic males rises[11].

Ferrer et al. [12] in Cuba, showed at the beginning of the pandemic the highest number of asymptomatic people was confirmed in the territories of Mayabeque, Isla de la Juventud, Granma, Villa Clara levelled off. At present most asymptomatic patients are diagnosedin the eastern provinces.

In Japan about 60% of the cases were asymptomatic, with great implication in the maintenance of viral transmission in the community[13]. These results are similar to those obtained in this investigation and this could be related to the increase in active screenings and the carrying out of RT-PCR to an even larger number of people.

Silent or asymptomatic transmission complicates the scenaRío of action, since it implies stronger screening strategies and containment contagions, as well as greater social isolation among citizens[14].

CONCLUSIONS

The outbreak of the COVID-19 pandemic in Pinar del Río was characterized by showing a behavior similar to that of the rest of the country and has points that coincide with the pandemic worldwide.

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AUTHORING

GAHH: conceptualization, data curation, formal analysis, research, in the provision of resources and in writing - review and editing of the work
GLHM: conceptualization, data curation, formal analysis, research, in the provision of resources and in the writing - revision and editing of the work.

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Comportamiento del rebrote de la pandemia por COVID-19 en Pinar del Río

RESUMEN

Introducción: la provincia Pinar del Río ha presentado una compleja situación epidemiológica desde los inicios del rebrote de la COVID-19.Objetivo: caracterizar el comportamiento del rebrote de la pandemia por COVID–19 en Pinar del Río. Métodos: estudio observacional, descriptivo y transversal, con un universo de 623 pacientes confirmados positivos a la COVID-19 y sus contactos 7 725, los durante los meses de octubre y noviembre de 2020, se utilizaron métodos teóricos, empíricos y estadísticos.Resultados: los municipios con mayor número de casos confirmados fueron Pinar del Río con 243 (39,0 %), Consolación del Sur 143 (22,9 %) y Guane con 124 (19,9 %). Predominó el sexo masculino, 384 casos (61,6 %) y el grupo de 19 a 39 años de edad, 225 (36,1 %), el mayor número de asintomáticos estuvieron en Pinar del Río con el 30,8 %, Consolación del Sur el 20,2 % y Guane con el 13,0 %. La mayoría de los contactos de casos confirmados de COVID -19 se reportaron en Pinar del Río, 2 788 contactos (36,0 %), Consolación del Sur con 1 922 (24,8 %) y Guane con 1 089 (14,0 %), los contactos de casos confirmados con RT-PCR positivos a COVID – 19 predominaron en Pinar del Río, 212 (40 %), Consolación del Sur con 115 (21,6 %) y Guane con 106 casos (10, 1%). Conclusiones: el rebrote de la pandemia por COVID–19 en Pinar del Río mostró un comportamiento similar a la del resto del país y tuvo puntos coincidentes con la pandemia a nivel mundial.

Palabras clave: Coronavirus; COVID-19; Pandemia; Rebrote.