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Evolution of COVID-19 cases from december 2019 to october 2020 in Maranhão

Evolucón de los casos COVID-19 desde diciembre de 2019 a octubre de 2020 en Maranhão

Evolução dos casos de COVID-19 de dezembro de 2019 a outubro de 2020 no Maranhão

ABSTRACT
At the end of December 2019, in Wuhan, a new variety of Corona virus was identified, being declared as a public health emergency by the World Health Organization. OBJECTIVE: To analyze the epidemiological evolution of COVID-19 in the state of Maranhão. METHODS: This is a descriptive and retrospective epidemiological study, with a quantitative approach. RESULTS: Maranhão represents 1.7% of the cases in Brazil, ranking 5th in the Northeast region. In terms of number of deaths due to Severe Acute Respiratory Syndrome, the same state contributed with 2.1% of Brazilian cases, with its predominance in females (56%) and in the age group between 30 and 49 years (37.5 %). CONCLUSION: The importance of promoting further studies on the disease and investing in strategies to control the coronavirus is emphasized, since the outbreak of COVID-19 is recent and its duration is uncertain.
DESCRIPTORS: Coronavirus; Public Health; Descriptive epidemiology.

RESUMEN
A fines de diciembre de 2019, en Wuhan, se identificó una nueva variedad del virus Corona, declarada emergencia de salud pública por la Organización Mundial de la Salud. OBJETIVO: Analizar la evolución epidemiológica del COVID-19 en el estado de Maranhão. MÉTODOS: Se trata de un estudio epidemiológico descriptivo, retrospectivo, con enfoque cuantitativo. RESULTADOS: Maranhão representa el 1,7% de los dos casos en Brasil, ocupando el quinto lugar en la región Nordeste. En cuanto al número de defunciones por Síndrome Respiratorio Agudo Severo, o el mismo estado, dos casos brasileños aportaron el 2,1%, con predominio de mujeres (56%) y un grupo de 30 a 49 años (37, 5%). CONCLUSIÓN: Se enfatiza la importancia de impulsar más estudios sobre la enfermedad e invertir en estrategias para controlar el coronavirus, ya que el brote de COVID-19 es reciente y su duración es incierta.
DESCRIPTORES: Coronavirus; Salud Pública; Epidemiología Descriptiva.

RESUMO
No final de dezembro de 2019, em Wuhan, uma nova variedade de Corona vírus foi identificada, sendo declarada como uma emergência de saúde pública pela Organização Mundial de Saúde. OBJETIVO: Analisar a evolução epidemiológica do COVID-19 no estado do Maranhão. MÉTODOS: Trata-se de um estudo epidemiológico descritivo e retrospectivo, com abordagem quantitativa. RESULTADOS: O Maranhão representa 1,7% dos casos no Brasil, figurando na 5° colocação na região Nordeste. Em termos de número de óbitos por Síndrome Respiratória Aguda Grave, o mesmo estado contribuiu com 2,1% dos casos brasileiros, sendo sua predominância em indivíduos do sexo feminino (56%) e na faixa etária entre 30 a 49 anos (37,5%). CONCLUSÃO: Ressalta-se a importância de promover mais estudos sobre a doença e investir em estratégias para o controle do coronavírus, pois o surto do COVID-19 é recente e sua duração é incerta.
DESCRITORES: Coronavirus; Saúde Pública; Epidemiologia descritiva.

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INTRODUCTION

At the end of December 2019, in Wuhan, a city in China a new variety of Corona virus emerged, being declared a public health emergency by the World Health Organization (WHO). This virus is called SARS--CoV2 and produces a disease called COVID-19, which can range from a simple flu to more severe cases (with great respiratory damage), putting the lives of those affected at risk. [1]

In Brazil, on February 3, 2020, it was declared through Ordinance No. 188 of the Ministry of Health, a public health emergency of national importance, due to the occurrence of human infection by the new coronavirus, with the intention that the country develop prevention/control measures to address this new pandemic. According to the Ministry of Health (MH), the first case of infection in Brazil by the new coronavirus was on February 26 in São Paulo, and from this new case the whole country was on alert. [2]

A characteristic of SARS-CoV2 that contributed to it becoming a worldwide problem, was its form of transmission, which occurs through direct contact with the virus itself, that is, the droplets of sneezing or cough of those infected come into contact with mucous membranes (mouth, eye and nose), causing coronavirus infection. It can survive outside a host for more than 72 hours, so handrails and door handles are places where it can become a potential contamination environment, so it is important to avoid crowding and keep a minimum distance of 1,5 meters from other people, to avoid contact with the droplets and not contract the virus. [1]

In view of the significant increase in COVID-19 worldwide, people must take specific preventive measures, which consequently impact on the lives of human beings and society, as the restriction of social contact can bring consequences for mental health, in addition to workers are prevented from going to their workplace, starting to work remotely at the risk of losing their job, their source of income. [1]

At the end of December 2019, in Wuhan, a city in China a new variety of Corona virus emerged, being declared a public health emergency by the World Health Organization (WHO)

The symptoms of COVID-19 include high fever, persistent cough and difficulty in breathing, the complications of this infection usually arise especially in elderly people over the age of 60, as the virus is more aggressive in organisms with comorbidities (with pre-existing diseases), especially cardiac and diabetic patients, however, this does not rule out the impossibility of death in healthy people. [3]

In this perspective, this work is necessary to understand and answer the question: "How did the evolution of Covid-19 occur?", Aiming at this, the research proposed to analyze the epidemiological evolution of COVID-19, in the same way exploring the world experience of prevention and control measures recommended by the World Health Organization.

METHODS

This is a descriptive, retrospective epidemiological study with a quantitative approach. The research took place between the months of September to November 2020. The data were obtained through epidemiological bulletins from the Ministry of Health and the State Health Secretariat of Maranhão, where the bulletins issued in the 10-month period, from December, were analyzed. from 2019 to October 2020.

The main countries analyzed in the world context were: China, United States, Italy, Spain, India and Brazil, analyzing whether COVID-19 evolved to increasing or decreasing values with the number of infected.

Soon after, we made a comparison with Brazil, Northeast region and Maranhão. In addition, we compared the severe acute respiratory syndrome with COVID-19 and investigated the age and gender variables in Maranhão, in order to verify the prevalence of COVID-19 cases. We consider three variables in the national, regional and state context: i. Incidence; ii. Lethality; and iii. Mortality. We used Office Excel 2016 to consolidate the results, both for creating tables and graphs.

The inclusion criteria for the analysis of the bulletins were: Complete bulletins that were within the period from December 2019 to October 2020, and the bulletins that presented only information on preventive measures and did not present informational data on the cases of the COVID-19.

This work did not require the evaluation of the Research Ethics Committee because it is an analysis of epidemiological data in the public domain, in accordance with Resolutions nº 466/2012 and

510/2016 of the National Health Council, which regulates the research carried out with human beings.

RESULTS

To build the information, it was possible to structure a flowchart (Figure 1) where we traced the timeline of how the Covid-19 cases emerged in a summarized way in China and Brazil.

The first case showing symptoms of coronavirus was still in November 2019, being confirmed by a retrospective study according to the Ministry of Health bulletins.[4]

It was reported that in late December 2019, several local health facilities in China received groups of patients with pneumonia of unknown cause, and were linked to a wholesale seafood and wet animals market in Wuhan, Hubei province, China. [5,6]

On January 23rd, Brazil reported the first suspicious case to Covid-19, on the 30th, WHO declared a public health emergency of international importance in that period the virus had already reached 24 countries and China already had 7.700 cases and 170 deaths. [4,7]

On February 26, Brazil has its first confirmed case in the Southeast region in São Paulo, a 61-year-old man who was admitted to the Israeli Hospital Albert Einstein, and the second case confirmed on the 29th, also a man, according to the information the two had just returned from a trip from Italy. [4,8]

The first death notified in Brazil was on March 17th, until the end of the same month Brazil had already registered 4.579 cases and in the world until April 3rd, there were 972,640 confirmed cases of COVID-19 with 50.325 deaths. The United States of America was the country with the highest number of cases, totaling 213.600, and Italy had the highest number of deaths, 13.917. [4,7]

In May, Brazil transcends all countries and reaches the second position in the world ranking with 347.398 confirmed cases for Covid-19, in June, India appears in the world ranking and assumes the third position with 508.953 cases, in the same period Brazil has already it exceeded 1 million cases, still in 2nd place, second only to the United States, which reported 2.467.837 cases. [9]

In Brazil, 8,47% of the cases of COVID-19 were associated with Severe Acute Respiratory Syndrome (SARS), and the cases notified in the same period for SARS, 54% of them were due to Covid-19. The association of SRAG with COVID-19 in relation to deaths was even more expressive, since 10,6% of these deaths were linked to SRAG and 70% of the deaths notified by de SRAG were due to COVID-19. [9]

In the table below we will follow the evolution of COVID-19 in the Northeast region, with an emphasis on Maranhão, in the period also from April to October 2020.

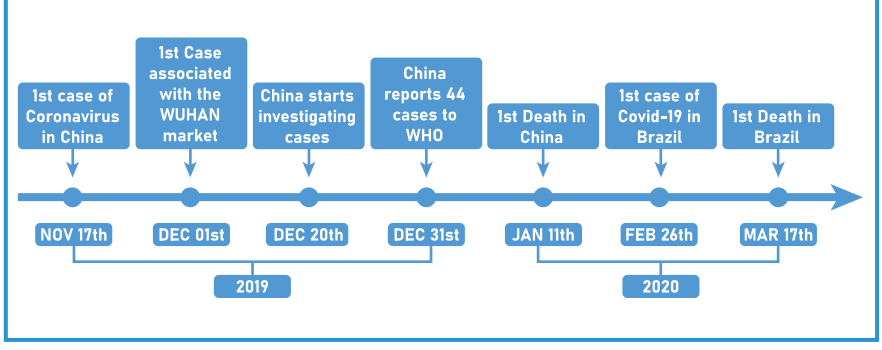
Most of the cases in Maranhão were concentrated in the capital, accounting for 76,1% of the cases in April, most of the deaths reported in the state of Maranhão and the northeast region in that period, were male elderly and with comorbidities such as diabetes and heart diseases .

It was observed that COVID-19 reached 2,4% of the Brazilian population and the Northeast region and 2,6% in Maranhão, a smaller number compared to the Southeast region specifically in São Paulo, that the prevalence of infected with the new coronavirus reached 11,1% of the population, that is, 1,32 million. [2,10]

The mortality and lethality rates were also similar, but noting that there are places in Brazil where these indications were often higher than in the country, such as the mortality rate in the southeast region (79,0) and in the state of Ceará (100,8) in the northeast. [8,11]

There was a predominance of females with 55,8% of cases and the age group between 30 and 49 years old, totaling 38%

Figure 1. Emergence of Covid-19 cases between 2019 and 2020.



Source: Epidemiological bulletin from the Ministry of Health/Brazil.

Table 1. Evolution of Covid-19 cases in the Northeast, Maranhão and São Luís regions.

EVOLUTION OF THE COVID-19 CASES IN THE NORTHEAST, MARANHÃO AND IN THE CAPITAL SÃO LUÍS							
PLACE	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER
NORTHEAST	17,531	119,801	451,076	87,1373	1.191,103	1.384,855	1.417,339
MARANHÃO	3,506	35,297	80,451	120,061	15,616	173,564	185,341
SÃO LUÍS	2,671	9,255	13,050	16,160	18,796	21,098	23,272

Source: Epidemiological bulletin from the Ministry of Health/Brazil, SES-MA.

of cases, in Brazil at the beginning of epidemiological bulletins, around May, an analysis of the profile of most affected and the prevalence of females was reported in 52,8% of cases. [12]

In the period observed, the race of the notified cases with the highest number was brown and yellow, being 39,40% and 20,40%, respectively, about 25% of the cases did not have the race identified. In Brazil, the brown and white race that were identified as dominant, however 51,3% had no information, as the data had not been filled in, thus hindering information with greater credibility. [12]

DISCUSSION

Despite great efforts on different continents, the facts about the disease are not yet consistent and the search for the vaccine as the best means of preventing the virus continues.

In studies conducted in China, there are reports that the first patient who was admitted to the hospital with the symptoms of COVID-19 was on December 12th, 2019, so there is information that is not consistent, bringing openness to the hypothesis raised that the virus really already circulated in the eastern country before WHO notifications. [13,14,15]

During the analysis of the evolution of COVID-19 in Brazil, it was possible to observe that the virus potentiated SARS, in the period from 10th to 16th May 2020, the highest number of cases of SARS and deaths occurred, between April 26th and 2nd May 2020. In the analyzed bibliographies, it was observed that the cases for SARS in previous years were below the numbers that we now report in the middle of the pandemic, one of them carried out in Pernambuco observed the SARS between 2015 to 2019 (pre-pandemic) and now 2020 (pandemic period), that is, Covid-19 generated an increase, which in general makes us realize that this pandemic has brought to light how much measures are needed to control and spread respiratory diseases. [1,16]

The evolution of the virus in the Northeast region was fast and persistent, this region is the second most affected in Brazil, behind only the southeast region where the first notifications came from, and Maranhão was one of the most affected states in the region, being the 6th state in the national ranking of number of notified cases.

Despite great efforts on different continents, the facts about the disease are not yet consistent and the search for the vaccine as the best means of preventing the virus continues.

On March 20th, the first case in the state of Maranhão was notified, an elderly person, in serious condition, who had recently arrived from São Paulo. At the end of March, Maranhão had already closed the month with 52 cases and 1 death, and during the entire period the evolution of the virus has been growing more and more. [16]

Something relevant to be highlighted, regarding the testing of the population, most of the tests performed are of the molecular type, however in the northeast and in Maranhão serological tests are frequently used, but the recommendation is to use the molecular exam, that is, the swab in all, since it identifies the virus even in asymptomatic people, however this type of test requires trained professionals and greater care with the material collected because it has a much higher level of contamination, putting at risk the professionals who perform the test . [2]

What created difficulties in the interiors of the state of Maranhão, where most professionals did not have specific training to carry out the tests and mass testing would be ideal, since it provides information that should modify public health actions. [9,12]

There was a great difference in the race variable, between cases in the national context compared to those in the state of Maranhão, one of the reasons why brown race is prevalent in the state may be due to its greater incidence in the region, which according to IBGE, the state of Maranhão has 66.5% of the population in the race/brown color.

In a study carried out in Maranhão in the period from March to April, it also found the prevalence of the age group of 30 to 49 years old and of the female sex, whereas mortality in the male sex and in the age group above 60 years old, in the last data collected in the SES deaths also became prevalent in females with 61% of cases, the age group remained the same. [1]

This study had its limitations, which are directly linked to the constant updating of data in processing, which shows how there is a steady evolution of cases and transmission of the disease. Thus, it is important that epidemiological studies be continued to assess the extent of the pandemic, as well as its changes in the epidemiological and social scenarios in Maranhão.

CONCLUSION

It was possible to observe that there was

a great progression in the number of infected, in all age groups and in the amount of death. Thus, the continuation of studies to understand the outcome of the disease is of great relevance, as it is not yet known what damage can cause in the long run.

It is necessary for the government to implant even more strategies for the control of the coronavirus, intensifying in preventive measures, and to invest in the tests to obtain knowledge of the real number of people affected by the virus, in order to reduce the transmissibility and have broad knowledge about the population profile reached, since the outbreak of COVID-19 is recent, there are not many studies and its duration is uncertain. ■

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