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RESEARCH ARTICLE

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EPIDEMIOLOGICAL PROFILE OF ADULT PATIENTS NOTIFIED WITH SUSPECTED OR CONFIRMED OF COVID-19 AT THE TEMPORARY HOSPITAL OF RECIFE TWO IN THE STATE OF PERNAMBUCO

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ABSTRACT

In January 2020, the World Health Organization (WHO) declared a Public Health Emergency of International Interest caused by the SARS-CoV-2 (Severe Acute Respiratory Syndrome) virus discovered in Wuhan, China. This is a retrospective observational cohort study of hospitalized patients with suspected COVID-19. in a temporary hospital in Recife-HPR2 in the period from April 2020 to September 2020. The worldwide chronology of COVID-19 infections goes beyond the scope of this study. During the study period, 1,592 patients were admitted to the hospital's ward and Intensive Care Unit - respiratory ICU beds, with 1,118 hospitalized in ward beds and 474 ICU beds. Assistance to cases of SRAG goes beyond official numbers, which represent only a fraction of the reality experienced in hospitals. The importance of the public health system in the care of patients with the new coronavirus infection is highlighted, in a state in which the existing hospitals are overcrowded, making it impossible to transfer and maintain patients with mild cases in ward beds, as well as patients with serious cases in ICU beds, demonstrating how important field hospitals were and are in the care of the population affected by COVID-19 in the state of Pernambuco.

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INTRODUCTION

In January 2020, the World Health Organization (WHO) declared a Public Health Emergency of International Interest caused by the SARS-CoV-2 (Severe Acute Respiratory Syndrome) virus discovered in Wuhan, China. The new coronavirus has a high capacity to spread quickly and in a short time it has reached many parts of the world, as well as becoming a public health emergency, being responsible so far for 191,148,056 Confirmed cases. As for the clinical aspect of SARS-CoV-2 infection, it appears to be broad, ranging from an asymptomatic course to mild symptoms of an upper respiratory tract cold to a severe acute respiratory failure syndrome that can progress to death. The most frequent clinical manifestations in patients with COVID-19 are fever, cough, fatigue, myalgia, respiratory distress, sputum, anorexia, chest tightness, dyspnea. However, in cases that evolve to more severe symptoms where it can be reported that respiratory viruses can penetrate the central nervous system (CNS), affect neurons and glial cells and induce various neurological pathologies (neurovirulence), including encephalopathy, encephalitis, hemorrhagic necrotizing encephalopathy, stroke, epileptic seizures, Brazil takes the sixth position in the world ranking among the countries with the highest number of confirmed cases of COVID-19, just behind the United States, Russia and the United Kingdom. SARS-CoV-2 is transmitted through the airway through small droplets that spread one or two meters apart when talking or coughing. The average incubation period is five days, with an average interval between 3 to 7 days and a maximum of 14 days. During the viral replication phase, individuals may exhibit mild symptoms as a result of the effect of the virus and the innate immune response. Variations in clinical manifestations are due, among other properties, to differences in age composition, morbidities, social conditions, as well as differences in culture, social structure and health care between countries and regions. It is essential to understand and identify the main epidemiological and clinical characteristics of patients with SARS-CoV-2, in order to recognize the most vulnerable profile to the disease, as well as help in prevention and detection. In this bias, the aim of this study is to describe the epidemiological profile of adult patients notified with suspicion or confirmation of COVID-19 at the Provisório do Recife Hospital in Pernambuco, analyzing sociodemographic, cultural and clinical criteria. Data on the clinical evolution of patients with confirmation of COVID-19 become progressively more available in the literature. However, there is a lack of data describing globally all patients who go through inpatient wards dedicated to respiratory syndromes during the pandemic.

METHODOLOGY

Study design and population: This is a retrospective observational cohort study of hospitalized patients with suspected COVID-19. in a temporary hospital in Recife-HPR2 in the period from April 2020 to September 2020. As an inclusion criterion, it was considered confirmed cases of severe acute respiratory syndrome and exclusion were patients with suspicion without laboratory confirmation for COVID-19, coming to the studied hospital from the first or more relapse of symptoms. Data were obtained through a thorough analysis of electronic medical records and were recorded in a standardized notification form by the Ministry of Health, containing patient identification, demographic data, clinical evolution and complementary exams. The information was registered through the elaboration of an Excel spreadsheet, containing the variables and the results obtained from the analysis performed using tabwin.

General methodology for completing the Severe Acute Respiratory Syndrome notification form: Information related to SRAG, reported by the patient or by the attending physician, was recorded in closed fields with three response alternatives:

- 1- yes, if the symptom/sign in question was reported;
- 2- no, if the symptom/sign in question was denied;
- 9- ignored, if there is no record of this symptom/sign.

Demographic and identification data: The patient's identification number and date of admission were initially recorded, that is, when the diagnosis and/or treatment of the first episode of SARS occurred. Subsequently, through the medical record and the notification form, the patient's name, dates of birth and hospital discharge were obtained. Through the notification form, it was possible to obtain the age and months of the patients.

Clinical examination data: The interview data were registered during the anamnesis performed during the hospitalization period. Information from the physical examination was obtained at this time and in two other periods. The first period brings data from the natural history of COVID-19 and/or SRAG, allowing the identification of its presentation without the influence of therapeutic measures. The second period comprised the improvement that patients usually experience in the first week of treatment even without specific therapy. The last period was related to the time of hospital discharge or death, providing clinical data after the longest therapeutic intervention time.

Physical exam: The main signs found in the medical records were: fever, cough, respiratory distress, dyspnea, O₂ saturation <95%, diarrhea, others.

laboratory tests

Specific for severe acute respiratory syndrome: Naso-oropharyngeal secretion collections were performed, as reverse transcriptase reaction followed by polymerase chain reaction.

Statistical analysis: Descriptive statistical methods were used for analysis, such as relative and absolute frequency, proportions, means and standard deviation of categorical and numerical variables. The results were presented in percentages and graphs and tables, using Microsoft Office Excel 2010 software (version 8.1) and EpilinfoTM version 7.2.

Ethical aspects: Ethical aspects were guided by Resolutions Nos. 466 of 2012 and 510/2015 of the National Research Ethics Commission, which stipulates regulatory ethical standards for research involving human beings.

RESULT AND DISCUSSION

The worldwide chronology of COVID-19 infections goes beyond the scope of this study. However, the total number of cases in Pernambuco changes daily and can be observed almost in real time in various sources, including the SES bulletins. On February 26, 2020, LACEN-PE received the first samples of suspected cases for investigation of COVID-19. Initially, the samples were tested for Influenza by RT-PCR at LACEN-PE, a diagnosis already implemented since 2012, and sent to the Respiratory Virus Laboratory of Instituto Evandro Chagas (LRV-IEC), National Influenza Center (NIC) and laboratory reference for influenza for Pernambuco. In the last months preceded by the pandemic, there was an increase in the movement of people and goods, narrowing distances and sharing disease agents, beyond the borders of their countries of origin and residence.

Therefore, important changes in the pattern of morbidity and mortality in the population of Pernambuco were evidenced, due to the change in epidemiological behavior, the appearance of SARS-CoV-2, due to the increase in the occurrence of the aforementioned injury. Faced with this scenario, which now requires more agile responses from health services to risks and emergencies in Public Health, the Recife Strategic Information Center on Health Surveillance (Cievs Recife) conducts daily mining of rumors and news of outbreaks, epidemics and events that may characterize a risk or emergency in public health, through timely capture in the main media.

Table 1. Comparative analysis between confirmed and unconfirmed cases

	Total	Confirmed	% Confirmed	Unconfirmed	% Unconfirmed
N (%)	1592	1056	66.3	536	33.7
Male (%)	853	569	66.71	284	33.29
Women (%)	739	487	65.9	252	34.1
Average time to swab result (standard deviation)	3 to 9 days	3 to 9 days	74.3	3 to 9 days	69.6
Average length of hospital stay (ICU)	9 to 10 days	10 to 11 days	9.3	8 to 9 days	9.09
Average length of hospital stay (Infirmery)	7 to 8 days	7 to 8 days	18.2	6 to 7 days	25.82
Mortality (%)	435	304	69.89	131	30.11

Aiming to disseminate and update health professionals and managers on the occurrence of events related to public health emergencies in the municipalities of the state of Pernambuco. However, all cases of rumors of COVID-19 are analyzed because they are cases with a real possibility of contamination. However, the first samples with a positive result for SARS-CoV-2 arrived at LACEN-PE on March 6th, from a couple with a history of traveling to Italy. On April 20, 2020, the Provisional Hospital of Recife 2 (Figure 1), was inaugurated with the commitment to provide care to SUS users, performing procedures of medium and high complexity to care for patients suspected or diagnosed with the new Coronavirus (Covid - 19 / Severe Acute Respiratory Syndrome - SRAG).

Having the installed capacity to exclusively care for patients suspected or diagnosed with Coronavirus (Covid - 19/ Severe Acute Respiratory Syndrome - SRAG), with a total of 420 (four hundred and twenty) hospital beds, with 320 (three hundred and twenty) beds isolation clinics and 100 (one hundred) intensive care beds, with bed occupancy referenced through the State Bed Regulation Center - CRL. The main objective was to relieve the reference hospitals in Pernambuco, which were already over 90% occupied. This is the largest campaign hospital to fight the covid-19 pandemic in the state, located in the city of Recife, capital of Pernambuco.



Ascon-HPR2, 2020.

During the study period, 1,592 patients were admitted to the hospital's ward and Intensive Care Unit - respiratory ICU beds, with 1,118 hospitalized in ward beds and 474 ICU beds. Among hospitalized patients, the average length of hospital stay in the ICU was 9 to 10 days and in the ward it was between 7 to 8 days. These patients were admitted with a mean duration of symptoms of 8-10 days, being notified for SARS and having non-oropharyngeal swab collection for RT-PCR during admission to HPR2. These samples had results released by LACEN between (3-9) days. 1.56 (66.3%) cases were confirmed as COVID-19 by RT-PCR.

However, of the patients who underwent the exam, 536 of these (33.7%) had no laboratory confirmation of the infection (Table 1). The most common X-ray findings were unilateral alveolar infiltrate, bilateral alveolar infiltrate, interstitial infiltrate, pulmonary pattern. The most common comorbidities were hypertension, diabetes and heart failure. Overall mortality was 435 (27.3%). This study shows that the management of respiratory syndrome cases is much larger than expected when analyzing the epidemiological data of COVID-19. In our hospital, for each confirmed case, 3 other unconfirmed cases were admitted, with similar need for assistance, supplies and care. Assistance to cases of SRAG goes beyond official numbers, which represent only a fraction of the reality experienced in hospitals. The importance of the public health system in the care of patients with the new coronavirus infection is highlighted, in a state in which the existing hospitals are overcrowded, making it impossible to transfer and maintain patients with mild cases in ward beds, as well as patients with serious cases in ICU beds, demonstrating how important field hospitals were and are in the care of the population affected by COVID-19 in the state of Pernambuco.

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