Brief Report

Clinical, Demographic, and Epidemiological Characteristics of Patients Diagnosed with COVID-19 in Zahedan, Southeastern Iran

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Abstract

As the epidemic spreads, COVID-19 poses a severe threat to the health of communities. Description of epidemiological characteristics of COVID-19 patients helps with the prevention and scientific control of the pandemic. This descriptive study was conducted to describe the clinical, demographic, and epidemiological characteristics of 65 patients suspected of having COVID-19. A research-made questionnaire was used for data collection. Moreover, the patient's vital signs were examined. The samples were classified into the two groups of subjects with positive and negative RT-PCR test. Descriptive statistics were used for the analysis of data. The most common manifestations were fever, shortness of breath, and dry cough. Moreover, the lowest proportion belonged to Rh-negative in all ABO blood groups. The patients were mainly male, about 44 years old, and their first and most common manifestations were fever, shortness of breath, and dry cough. In vital signs examination, reduction of blood oxygen saturation was the most important finding. Health centers need to consider these signs in treating COVID-19 patients.

Keywords: COVID-19, Epidemiology, PCR

1. Background

In December 2019, a new coronavirus named SARS-CoV-2 was identified, formerly is known as 2019-nCoV. This pneumonia outbreak was started in Wuhan, China. The coronavirus disease 2019 (COVID-19) is primarily transmitted from person-to-person through close contact. As the epidemic spread to many countries, COVID-19 posed a severe threat to global health (1, 2). According to the World Health Organization (WHO), up to November 11, 2020, over 51,000,000 confirmed cases of COVID-19 were reported, with over 1,270,000 deaths (3). It has become increasingly clear that people could transmit the virus even they are asymptomatic (4). Fan et al. found that almost half of patients had over 50 years of age. A study found that men were more susceptible to contracting COVID-19 than women (5).

The most common early symptoms at the onset of the disease included fever, fatigue, dry cough, myalgia, and dyspnea (6). In a study conducted in New York City, 77.1% of 393 patients had fever, 79.4% cough, and 56.5% shortness of breath, while in Shanghai, the prevalence of fever was 86.9%, cough 46.4%, and shortness of breath 4.5%. In another study, most patients had an average count of white blood cells, lymphocytes, neutrophils, and platelets on admission (7, 8).

2. Objectives

The purpose of this study was to discuss the clinical, demographic, and epidemiological characteristics of COVID-19 patients to help with the prevention, identification, and scientific control of the pandemic.

3. Methods

This was a descriptive study using the convenience and census sampling methods to enroll participants who were suspected of COVID-19 and visited Bu Ali Hospital in Zahedan, Southeastern Iran, from March 20 to June 20, 2020. Based on the census sampling, the samples consisted of 65 subjects. The subjects were selected according to their

PCR test results. After filling a consent form, the participants completed a researcher-made questionnaire containing items on demographics, epidemiological characteristics, and clinical manifestations. The researcher-made questionnaire was evaluated and approved by an epidemiologist and emergency medicine, and infectious disease specialists. Furthermore, the patients' vital signs were recorded by a nurse. Based on RT-PCR results, the participants were classified into two groups of 41 subjects with positive RT-PCR test results and 24 with negative RT-PCR test results. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to analyze the data.

4. Results and Discussion

The purpose of this study was to describe the clinical, demographic, and epidemiological characteristics of COVID-19 patients to help with the prevention, identification, and scientific control of the pandemic. In this study, 65 subjects answered the questionnaire, 41 of whom had positive PCR, and 24 had negative PCR test results. The mean age of the positive PCR group was 44.24 ($\pm$ 13.03) years, and in the negative PCR, group was 40.79 ($\pm$ 19.34) years old. Regarding the gender of the subjects, in the positive and negative PCR groups, 70.7% and 73.65% were men, respectively. Thus, most of the subjects were male.

The current study showed that the mean age in the positive PCR group was 44.24 years, in contrast to an earlier study that reported 50 years (5). This somewhat contradictory result may be due to the young age of the Iranian population or behavior changes of the virus.

The four most common symptoms of COVID-19 in the positive PCR group were fever (61%), shortness of breath (57.3%), dry cough (53.7%), and muscle pain (39%). The four most common symptoms in the negative PCR group comprised of fever (66.7%), shortness of breath (58.3%), dry cough (50%), and muscle pain (45.8%).

The results indicated that the four most common symptoms in both groups were fever, shortness of breath, dry cough, and muscle pain. This similarity could be due to general guidance about COVID-19 that collected similar clients. A former study in New York City also reported cough, fever, and shortness of breath as the most prevalent symptoms (6), which supports this study findings. In another study in China, shortness of breath was reported in only 4.5% of patients (7). This inconsistency might be due to COVID-19 mutations during transmission, racial differences, or environmental resistance of individuals in different regions.

The three most common blood groups among the positive PCR group were: O+ (29.3%), A+ (9.8%), and B+ (9.8%),

and the three most common blood groups in the negative PCR group included: A+ (25%), AB+ (16.7%), and B+ (8.3%). Accordingly, the participants belonged to all blood groups.

However, it can be concluded that subjects with Rh positive blood group are more susceptible to contracting COVID-19, which is consistent with previous findings (9) that have shown O blood group was the most common blood group among COVID-19 patients. The AB and B blood groups were the most common in Pakistan (9), and the ABO blood group has not been confirmed in previous studies (9). This inconsistency in results might be due to racial, environmental, or virus behavioral differences.

As Table 1 shows, vital signs indicate that the mean heart rate of the positive PCR group was normal on admission (10). It also displays a reduction in the blood oxygen saturation of patients. The means of respiratory rate (RR), systolic and diastolic blood pressure, and body temperature in the positive PCR group indicate that all were in the normal ranges. Despite the high prevalence of fever in the subjects, the mean temperature was reported normal on admission (10).

In conclusion, this study showed that the mean age of the patients visiting the hospital was 44.24 years, and most of them were men. The Rh-positive blood group was more susceptible to contracting COVID-19. The most common manifestations were fever, shortness of breath, and dry cough. On vital sign examinations, the mean value of blood oxygen saturation reduced, while other examinations did not show any significant changes on admission. Thus, except oxygen saturation, other vital signs did not play a definitive role on admission.

The limitations of this study included the existence of quarantine conditions, some patients' inability to fill in the questionnaires, limitation in PCR testing, and the unwillingness of some patients to participate in the study.

Footnotes

Authors' Contribution: All authors have contributed significantly and meet the criteria for authorship. All the authors read and approved the final copy of the manuscript.

Conflict of Interests: There was no conflict of interest.

Ethical Approval: The study protocol was approved by the Ethics Committee of Zahedan University of Medical Sciences (code of ethics: IR.ZAUMS.REC.1399.001).

Table 1. Mean (Standard Deviation) of the Participants' Vital Signs [a]

PCR	Heart Rate (Beats/Min)	Blood Oxygen (mmHg)	Respiratory Rate (Breaths/Min)	SBP4 (mmHg)	DBP (mmHg)	Body Temperature (Degrees Centigrade)
Positive	93.07 (21.31)	90.46 (1.49)	17.85 (3.3)	104.47 (3.77)	63.41 (2.54)	36.54 (5.90)
Negative	101.29 (16.63)	90 (1.05)	21.83 (16.7)	98.95 (4.03)	69.37 (9.36)	37.66 (0.90)

[a] Numbers of subjects in the groups: Positive PCR, 41, and negative PCR.

Informed Consent: After filling a consent form, the participants completed a researcher-made questionnaire concerned with demographics, epidemiological characteristics, and clinical manifestations.

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