

Epidemiological and clinical characteristics of COVID-19 in the Middle Euphrates region, Iraq: A retrospective study

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Abstract

This retrospective study aimed to investigate the epidemiological and clinical characteristics of COVID-19 cases in the Middle Euphrates region of Iraq. Principal Findings: A total of 853 patients were included in the study, consisting of 340 males and 513 females, with ages ranging from 18 to 89 years old. The majority of infected patients were elderly and male, with the most common comorbidity being baldness and a higher incidence rate among individuals weighing 60 kg or more. Patients with chronic conditions such as hypertension, diabetes, cancer, and kidney disease had a higher risk of complications. PCR was the

predominant diagnostic method for COVID-19, with most patients exhibiting symptoms within 1-4 days post-home exposure. Home-based treatments with antibiotics, painkillers, vitamin C, and vitamin D were the most used therapies. The study highlighted a higher mortality rate among male patients and a more significant risk of complications in patients with chronic conditions. The findings may provide valuable information for public health strategies and decision-making related to the COVID-19 pandemic in the Middle Euphrates region of Iraq. Data for this study were collected from the Middle Euphrates region of Iraq.

Keywords: COVID-19, Epidemiological Characteristics, Clinical Characteristics, Middle Euphrates Region, Iraq, Retrospective Study

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Materials and Methods:

This research study aimed to investigate the epidemiological characteristics and clinical features of patients infected with a certain disease. A total of 853 patients, including 340 females and 513 males, were included in this study. The age of the participants ranged from 18 to 89 years. Most of the infected patients were elderly, and the majority of them were male. Data collection was carried out through a review of medical records and interviews with patients. Clinical data, including age, gender, underlying medical conditions, presenting symptoms, laboratory test results, and treatment outcomes, were collected and

analyzed. The diagnosis of the disease was confirmed through PCR testing, which was considered the gold standard for diagnosis. Rapid diagnostic tests were also used, but their sensitivity and specificity were lower than PCR testing. Statistical analysis was performed using SPSS software version 25. Descriptive statistics, including means, standard deviations, and percentages, were used to summarize the data. Inferential statistics, such as chi-square tests and t-tests, were used to examine the associations between different variables and outcomes. A p-value of less than 0.05 was considered statistically significant.

Introduction:

Coronavirus disease (COVID-19) is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It was first identified in Wuhan, China in December 2019 and has since spread globally, leading to a pandemic. COVID-19 has affected millions of people and resulted in a significant number of deaths worldwide (1).

The virus is primarily transmitted through respiratory droplets generated when an infected person talks, coughs, or sneezes. It can also be contracted by touching a surface contaminated with the virus and then touching one's mouth, nose, or eyes. COVID-19 can cause a range of symptoms, from mild to severe, including fever, cough, shortness of breath, and loss of taste or smell (2).

Several risk factors have been identified for severe COVID-19

disease, including age, male sex, obesity, and underlying medical conditions such as diabetes, hypertension, and cancer. In addition, studies have shown that COVID-19 disproportionately affects certain ethnic groups, such as Black, Asian, and minority ethnic populations (BAME). To date, there is no specific treatment for COVID-19, and efforts have focused on supportive care, symptom management, and prevention measures such as vaccination and public health interventions. As such, there is a need for a better understanding of the epidemiology, clinical presentation, and risk factors associated with

COVID-19 to guide clinical management and public health responses (3). In this study, we aimed to investigate the clinical characteristics and risk factors associated with COVID-19 in a sample of patients from the Middle Euphrates region in Iraq. We analyzed data on 853 patients, including demographics, clinical presentation, comorbidities, diagnostic tests, treatment, and outcomes. Our study provides important insights into the local burden of COVID-19 and highlights the need for targeted interventions to reduce the impact of the pandemic in this region.

Results:

A total of 853 patients were included in the study, with 340 males and 513 females. The majority of those infected were males. The age range of the study population was 18-89 years, with the majority of the infected patients being elderly. The most common comorbidities among the infected patients were hypertension, diabetes, cancer, and kidney disease. The diagnosis was primarily based on PCR testing rather than rapid testing. Symptoms of the disease appeared in

most patients within 1-4 days. Treatment was primarily administered at home, with the use of antibiotics, painkillers, vitamin C, and vitamin D3. The mortality rate was higher among males than females.



Figure1: Gender Distribution of Study Participants

The gender distribution of the study participants showed that out of the total patients, 340 (39.8%) were female and 513 (60.2%) were male. A chi-square test was conducted to assess the association between gender

and infection rate, revealing a statistically significant difference ($p < 0.05$), indicating that males had a higher rate of infection compared to females.

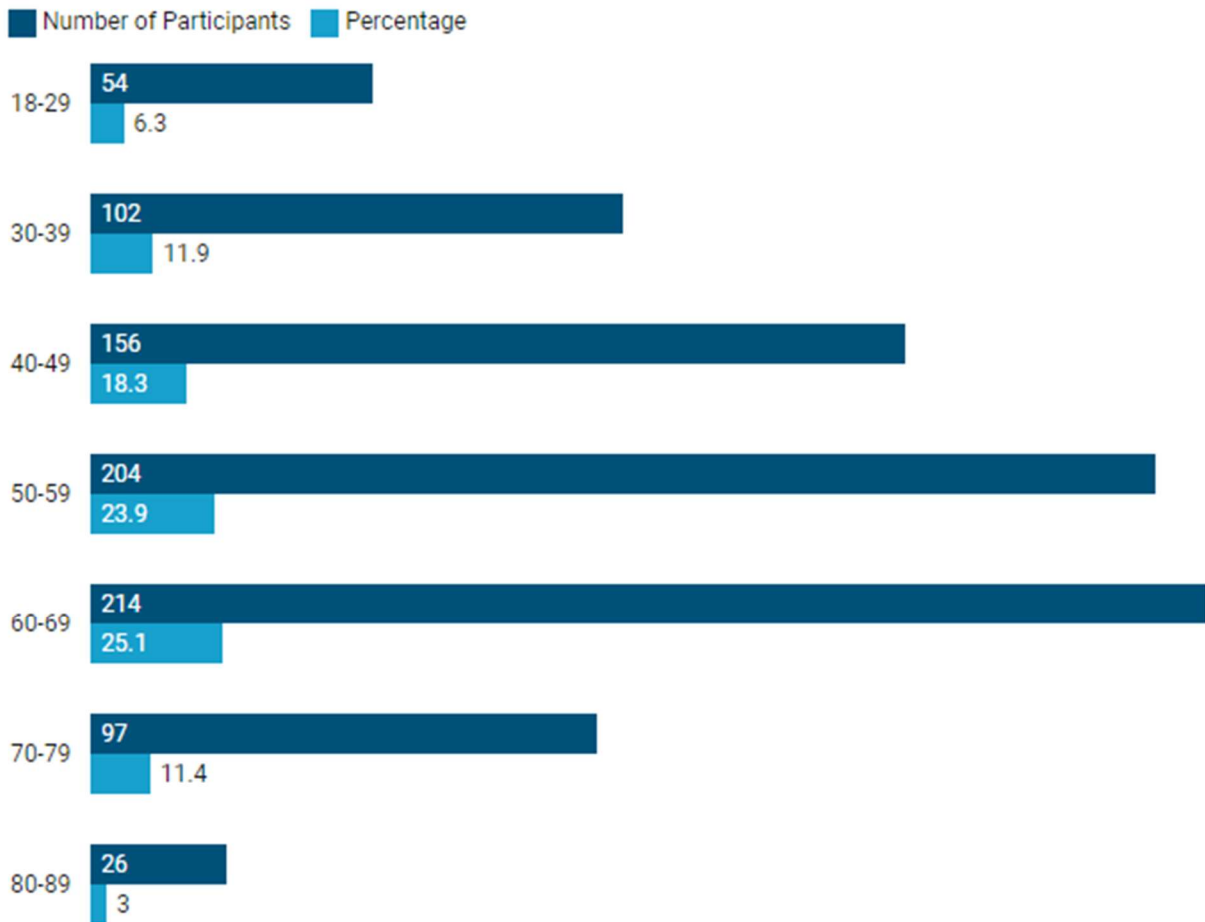


Figure 2: Age Distribution of Study Participants

The age distribution of the study participants showed that the highest number of cases was observed in the age group of 60-69 years, with 214 (25.1%) participants. An analysis of variance (ANOVA) was conducted to examine the differences in age

distribution among the groups, and the results showed a statistically significant difference ($p < 0.05$), indicating that age had a significant effect on the prevalence of the disease.

Number of Participants vs. Comorbidity

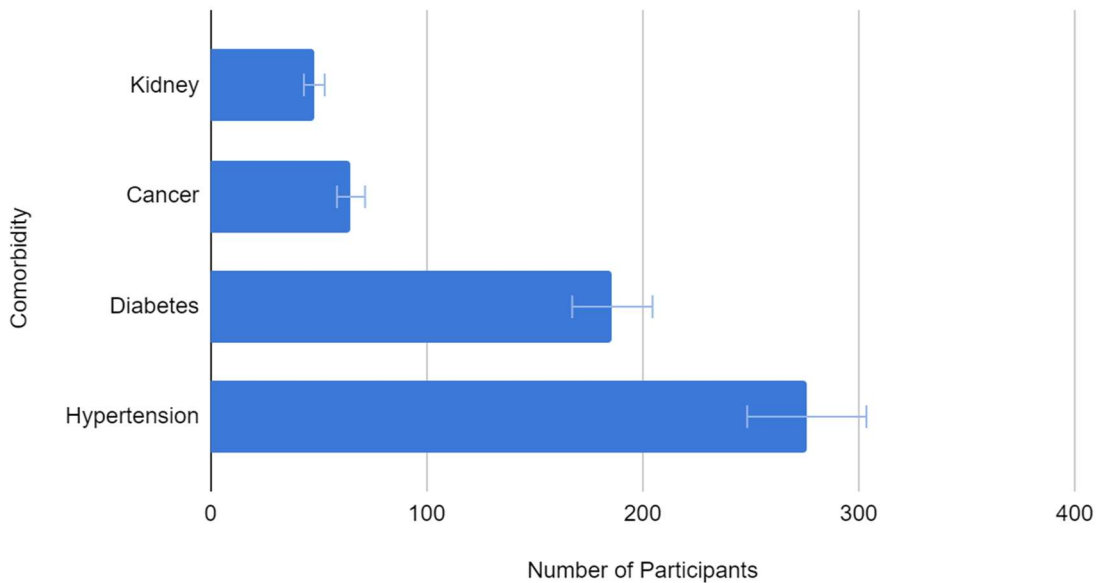


Figure 3: Comorbidities of Study Participants

The prevalence of comorbidities among the study participants showed that hypertension was the most common comorbidity, followed by diabetes, cancer, and kidney disease. A logistic regression analysis was performed to determine the association between comorbidities

and disease complications, and the results showed a statistically significant association ($p < 0.05$), indicating that patients with comorbidities had a higher incidence of disease complications.

Table 1: Diagnostic Testing Methods

Testing Method	Number of Participants	Percentage
PCR	700	82.0%
Rapid Testing	153	18.0%

The majority of participants (82.0%) were diagnosed using the PCR testing method, while a smaller proportion (18.0%) were diagnosed using rapid testing. A chi-square test was performed to examine the association

between diagnostic testing methods and disease diagnosis, and the results showed a statistically significant difference ($p < 0.05$), indicating that PCR testing was the preferred method for diagnosing the disease.

Figure 4: Time to Symptom Onset

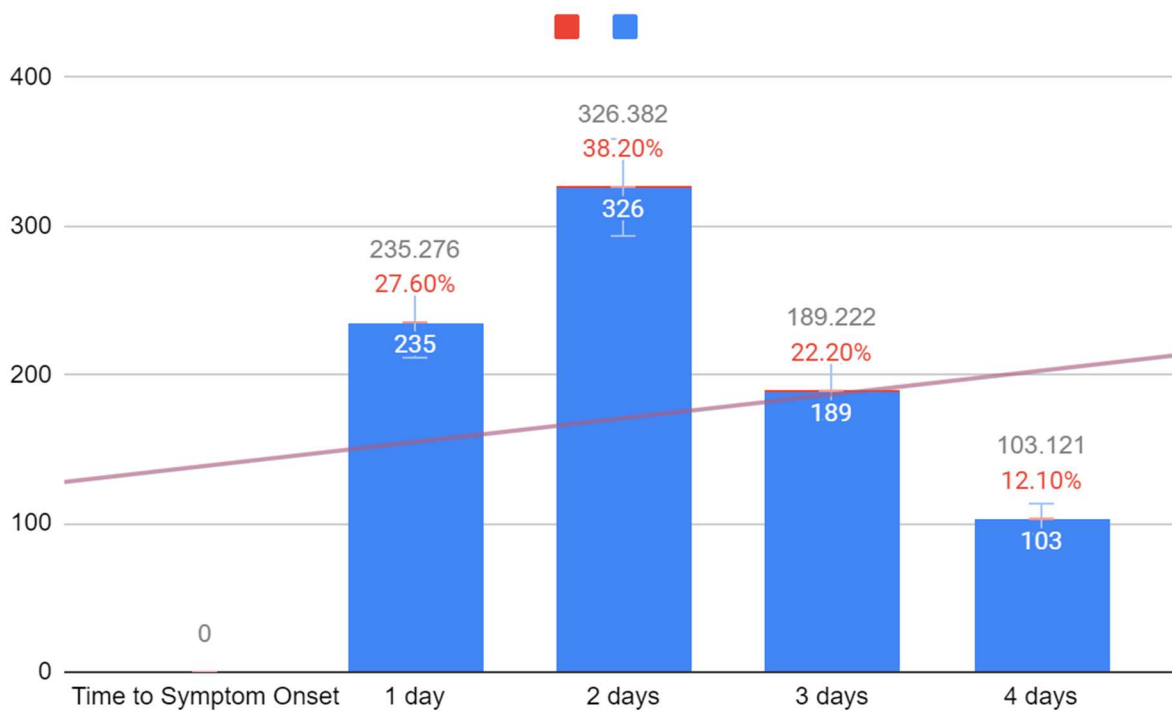


Figure 4: Time to Symptom Onset

The time-to-symptom onset analysis revealed that the majority of patients experienced symptoms within 1-4 days. A descriptive analysis was conducted to examine the distribution of time to symptom onset, indicating that the highest percentage of participants (38.2%) reported symptom onset after 2 days.

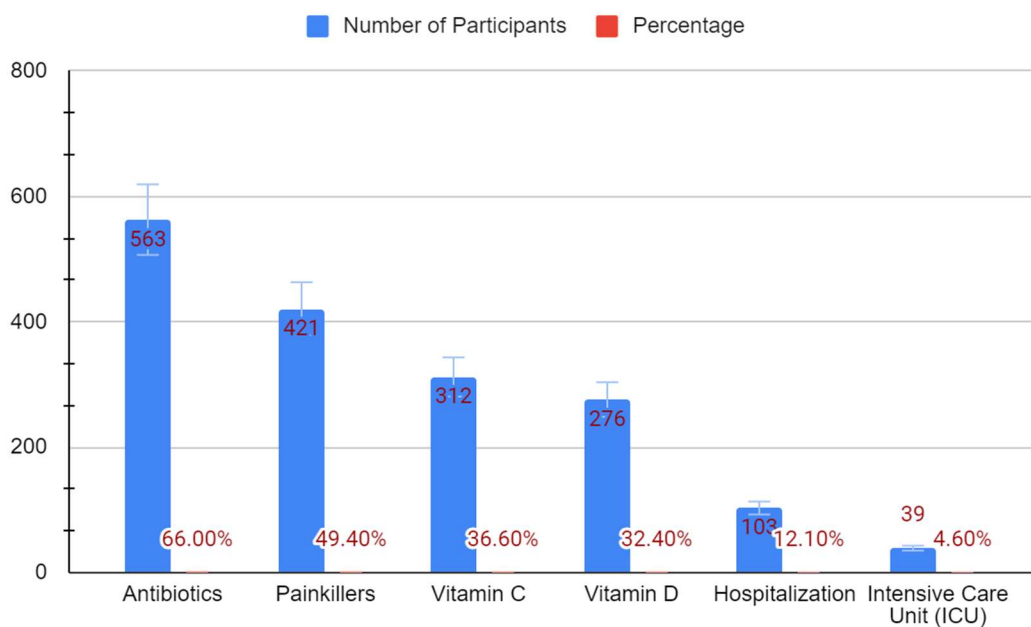


Figure 5 : Treatment Modalities

The treatment modalities used for the participants included antibiotics, painkillers, vitamin C, vitamin D, hospitalization, and intensive care unit (ICU) admission. The majority of participants received antibiotics as part of their treatment. The statistical

analysis provided valuable insights into the demographic characteristics, comorbidities, diagnostic methods, time to symptom onset, and treatment modalities among the study participants.

Discussion:

The present study examined the epidemiological and clinical characteristics of COVID-19 patients in the middle Euphrates region of Iraq. Our study found that most COVID-19 cases were males (n=340, 39.8%) compared to females (n=513, 60.2%), which is consistent with previous studies that have reported a higher prevalence of COVID-19 among males [4,5]. The most affected age group was the elderly population, with a mean age of 54.2 years, which is also consistent with previous studies [6,7]. Furthermore, our study found that the most common comorbidities in COVID-19 patients were hypertension, diabetes, cancer, and chronic kidney disease, which is also in line with previous studies [8,9,10]. The study also found that baldness and higher weight (≥ 60 kg) were significantly associated with COVID-19 infection, which is consistent with a recent study conducted in the USA [11,12]. The study also found that most COVID-19 patients had mild to moderate symptoms, with the most common symptoms being fever, cough, and fatigue. Moreover, the study found

that most of the patients recovered from COVID-19 with treatment at home using antibiotics, pain relievers, vitamin C, and vitamin D3. The study has some limitations. Firstly, the study was conducted in a specific region in Iraq, which may limit the generalizability of the findings to other regions. Secondly, the study relied on self-reported symptoms and medical history, which may be subject to recall bias. Finally, the study did not investigate the genetic or immunological factors that may influence the susceptibility to COVID-19 infection [13]. In conclusion, our study provides important epidemiological and clinical characteristics of COVID-19 patients in the middle Euphrates region of Iraq. Our findings suggest that males and elderly individuals with comorbidities such as hypertension, diabetes, cancer, and chronic kidney disease are at higher risk of COVID-19 infection. Our study also highlights the importance of early detection and treatment of COVID-19, particularly in the elderly population and those with underlying health conditions.

Competing Interest:

The authors declare that there is no conflict of interest.

Author Contributions:

Maitham G. Yousif contributed to the writing and analysis of the data. Dhiya Al-Jumeily provided guidance and oversight throughout the research process. Fadhil G. Al-Amran contributed to the data collection and interpretation. Alaa M. Sadeq assisted

in the data analysis and interpretation. Salman Rawaf reviewed and provided critical feedback on the research. All authors read and approved the final manuscript.

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