



COVID-19 clinical characteristics and outcomes in 60 hospitalized Iraqi patients - Case series

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General Note



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ABSTRACT

Background: since December 2019, China and in particularly Wuhan, faced an unprecedented outbreak challenge of coronavirus disease 2019, caused by the severe acute respiratory syndrome coronavirus 2. Clinical characteristics of Iraqi patients with COVID-19

and risk factors for mortality needed to be shared with the health care providers to improve the overall disease experience. *Methods:* prospective, single-center study recruited patients with confirmed SARS-CoV-2 infection who were admitted to Al-Shifaa Isolation Center / Baghdad Medical City between the mid of March and the end of April 2020 until had been discharged or had died. Demographic data, information on clinical signs, symptoms, at presentation, treatment, have been collected from patient records and a research questioner. *Result:* a total of 60 patients with confirmed COVID-19 infection have been included (mean age, 47 years [range, 12-80 years]; 72% male. Comorbidities were identified in 32 cases (53 %) including respiratory disease, cardiovascular disease, hypertension, and diabetes mellitus. Fever and headache were reported in 27 (45%) and 15 (25%) of the cases respectively. Respiratory manifestations recorded as wheezing observed in 3 (5%), rhinorrhea 12 (20%), crackles 3 (5%) sore throat 22 (36%), bronchial breathing 23 (38.3%) with the most of the patients experienced cough 41 (68.3%) and shortness of breath (SOB) 38 (63.3%). Cyanosis is recognized in 3 (5%), convulsion 4 (6.7%), malaise 41 (68.3%). Gastrointestinal manifestations were diarrhea 8 (13.3%), vomiting 12 (20%). Overall mortality was higher in male gender 8 (18.6%) and the overall average age of the died cases was 60.5 years. *Conclusion:* the infection with COVID-19 is more likely to infect older men with hypertension, diabetes, cardiovascular disease, and respiratory disease as significant risk factors for COVID-19 patients. The understanding of these factors can enhance defining those COVID-19 patients at higher risk, and allow a more targeted and approach to prevent those deaths.

Keywords: COVID-19, Coronavirus, Clinical Characteristics, Outcomes, WHO

1. INTRODUCTION

In December of 2019, a novel coronavirus named SARS-CoV-2 was recognized as the reason for pneumonia cases in Wuhan, a city in the Hubei Province of China. It quickly spread, causing an epidemic everywhere in China called coronavirus disease 2019 (COVID-19), followed by a growing number of cases in other countries over the world (Shareef and Abdulwahab, 2020). As of the 12th of March WHO announces the COVID-19 outbreak a pandemic (WHO, 2020). Since early detection of the virus, more than 5,411,498 cases of Covid-19 have been confirmed worldwide till 5/25/2020, with the first reported cases in Iraq occurring on February 24, 2020 (Engineering, 2020).

Coronaviruses are a cause of multiple system infections in numerous animals and primarily respiratory tract infections in humans, like severe acute respiratory syndrome (SARS) and the Middle East respiratory syndrome (MERS) (Yin and Wunderink, 2018). It is supposed that person to person transmission occurs through close-range contact, primarily via respiratory droplets; virus released in the respiratory secretions when the infected person coughs, sneezes, or talks (van Doremalen et al., 2020). Some data suggest that infected persons are more expected to be infectious in the earlier phases of infection. Viral RNA levels from upper respiratory samples appear to be greater shortly after symptom beginning compared with later in the illness (Wölfel et al., 2020; Zou et al., 2020). The incubation period for COVID-19 is assumed to be within 14 days following exposure, with most cases occurring around four to five days after exposure (Guan et al., 2020). The clinical features of COVID-19 appears to be broad including asymptomatic infection, mild respiratory illness, and severe pneumonia with respiratory failure and sometimes death, with many patients being hospitalized with pneumonia in Wuhan (Chen et al., 2020). Asymptomatic infections have been well recognized (Chan et al., 2020). Their defined frequency is unknown, but numerous studies performed in various settings suggest that they are common (Gudbjartsson et al., 2020). Pneumonia seems to be the most frequent serious manifestation of infection, characterized primarily by fever, cough, dyspnea, and bilateral infiltrates on chest imaging. Though, additional features, including upper respiratory tract symptoms, myalgias, diarrhea, and smell or taste disorders, are also common (Wang et al., 2020b). In this case series, we share the clinical characteristics, presentation, and outcomes of confirmed cases of COVID-19 admitted to Baghdad Medical City to inform other clinicians treating patients with COVID-19 to guide decision making regarding critical care capability and provision of resources.

2. METHODS

In this prospective, single-center study we recruited patients with confirmed SARS-CoV-2 infection (positive result by polymerase chain reaction testing of a nasopharyngeal sample) who were admitted to Al-Shifaa Isolation Center/ Baghdad Medical City between the mid of March and the end of April 2020 until had been discharged or had died. Only laboratory-confirmed persons were included. Clinical samples for Covid-19 diagnostic testing were obtained following the Centers for Disease Control and Prevention guidelines. We collected demographic data, information on clinical signs, symptoms, at presentation, treatment, and laboratory and radiologic results during hospital admission by patient records and a research questioner. If any data missed from the records or further clarification was required, we obtained data by direct contact with attending doctors and other healthcare providers. All

laboratory tests and radiologic evaluations, including plain chest radiography and computed tomography of the chest, were performed at the decision of the treating physician.

Statistical Analysis

Descriptive statistics were used to express the data; results are stated as means and standard deviations, as appropriate. Categorical variables summarized as counts and percentages. The analysis was performed with IBM SPSS version 23

3. RESULTS

During the period from mid of March to the end of April 2020, we included 60 patients with confirmed COVID-19 infection (mean age, 47 years [range, 12-80 years]; 72% male Table (1). Comorbidities were identified in 32 cases (53 %) including respiratory disease, cardiovascular disease, hypertension, and diabetes mellitus, we noted the higher rate was 22(37%) and 20(33%) for hypertension and diabetes respectively, and no reported history of liver diseases malignancy or chronic kidney diseases. 7% of the patients had a travel history to epidemic countries Table (2). Treatment is given to the patients in consistence with the clinical stage of the disease and in accordance with the local protocol adopted by the Iraqi ministry of health as shown in Table (3). The clinical manifestations were variable between mild to moderate in the level of severity. Fever and headache which were reported in 27 (45%) and 15 (25%) of the cases respectively; were treated by acetaminophen only. Respiratory manifestations recorded as the following: wheezing observed in 3 (5%), rhinorrhea 12 (20%), sore throat 22 (36%), crackles 3 (5%), bronchial breathing 23 (38.3%) with the most of the patients experienced cough 41(68.3%) and SOB38 (63.3%). Cyanosis is recognized in 3 (5%), convulsion 4 (6.7%), malaise 41 (68.3%). Gastrointestinal manifestations were diarrhea 8 (13.3%), vomiting 12 (20%). Agitation and confusion did not reported. By the end of April, 51 (85%) patients had been discharged and 9 (15%) patients had died Figure (1). The first two deaths were a 65-year-old man (patient 1) and a 27-year-old woman (patient 2). They had no previous chronic underlying disease. Patient 1 has history of travel. Overall mortality was higher in male gender 8 (18.6%) and the overall average age of the died cases was 60.5 years Table (4) and Figure (2). Correlations between the comorbid diseases and the clinical outcomes showed a greater rate of mortality was related to hypertension 6 (66.7%) and diabetes 4 (44.4%), Table (5).

Table 1 Patient's characteristics

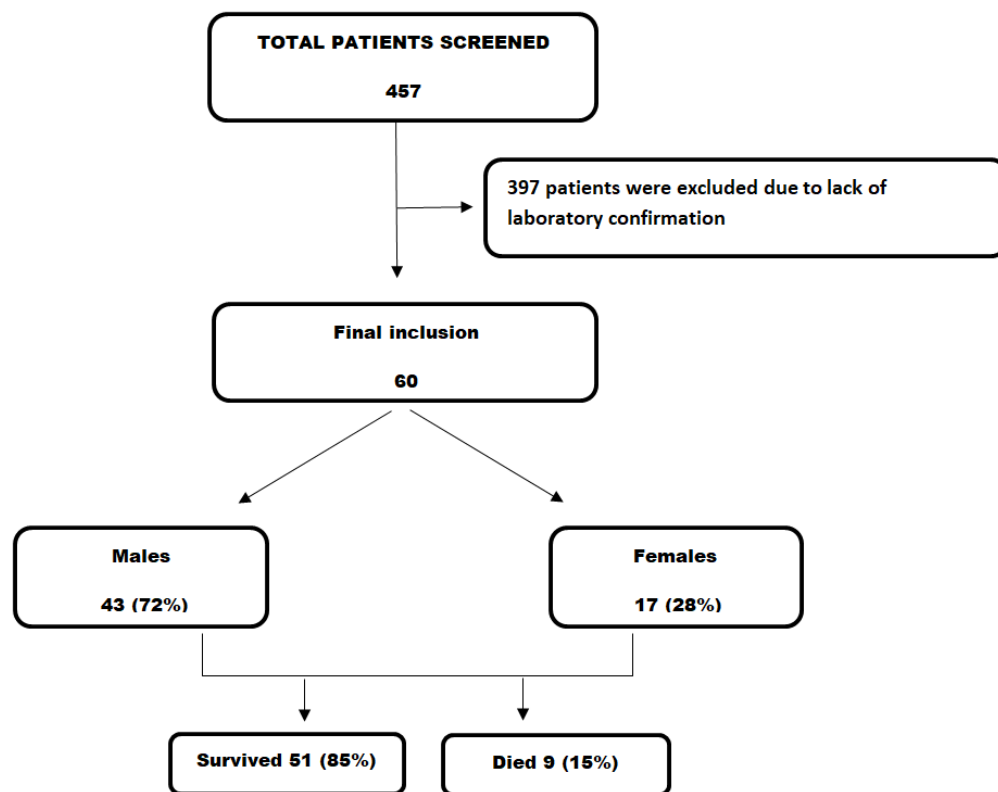
Patients 60	
Age, years	
Mean (SD)	47
Range	12 – 80
< 39	19 (32%)
40-49	9 (15%)
50-59	14 (23%)
60-69	10 (17)
≥ 70	8 (13%)
Sex	
Female	17 (28%)
Male	43 (72%)

Table 2 Travel and Medical history

Travel history	
Yes	4 (7%)
No	56 (93%)
Chronic medical illness	
Respiratory disease	4 (7%)
Cardiovascular disease	8 (13%)
Hypertension	22 (37%)
Diabetes mellitus	20 (33%)
Liver disease	0 (0%)
Malignancy	0 (0%)
Chronic kidney disease	0 (0%)

Table 3 Iraqi COVID-19 treatment protocol

COVID-19 without pneumonia	Hydroxychloroquine 400 mg BID first day then 200 mg twice daily for 5 days Azithromycin 500 mg first day then 250 mg daily for 5 days
COVID-19 with pneumonia in the ward	Hydroxychloroquine 400mg BID first day then 200mg twice daily for 14 days Azithromycin 500mg first day then 250 mg daily for 14 days Oseltamivir 75 mg twice daily for 5 days
COVID-19 with pneumonia in the intensive care unit	Hydroxychloroquine 400mg twice daily first day then 200mg twice daily for 14 days Azithromycin 500mg first day then 250 mg daily for 14 days Oseltamivir 75 mg twice daily for 5 days Lopinavir-Ritonavir 200mg/50mg two tablets twice daily for 5 days Antibiotics accordingly

**Figure 1** Flowchart depicting the number of patients screened, included in the study and number of survival and deaths

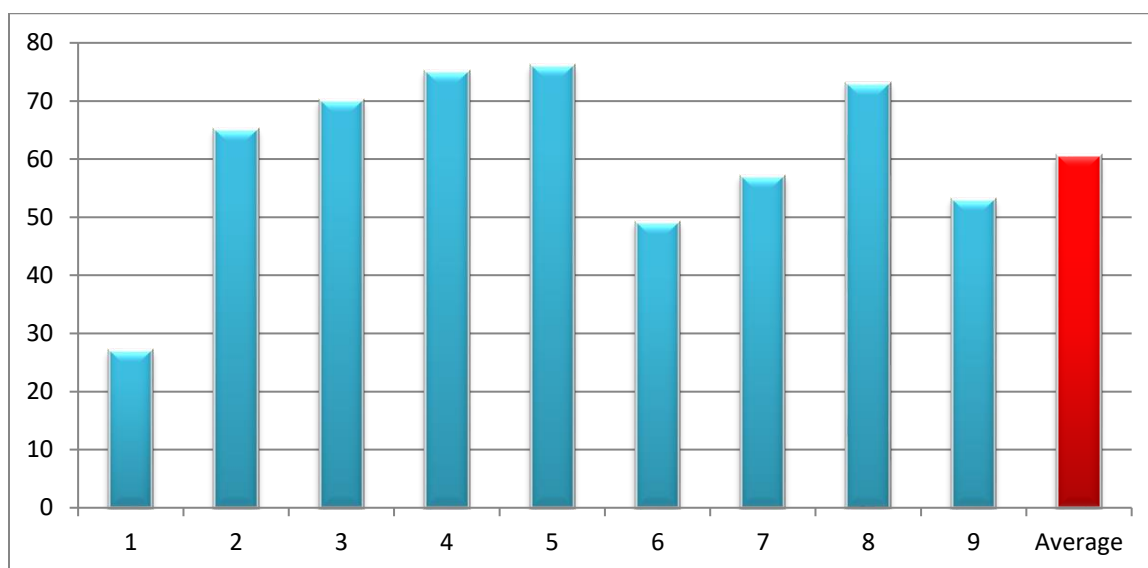


Figure 2 the age distribution by years of the 9 died cases: the blue column age by each case, red column: the average age

Table 4 Clinical characteristic and outcome

Features	Discharged	Died	Total
Fever	23 (45.1%)	4 (44.4%)	27 (45%)
Wheeze	2 (3.9%)	1 (11.1%)	3 (5%)
Sore throat	21 (41.2%)	1 (11.1%)	22 (36%)
Crackles	2 (3.9%)	1 (11.1%)	3 (5%)
Bronchial breathing	20 (39.2%)	3 (33.3%)	23 (38.3%)
Cough	35 (68.6%)	6 (66.7%)	41 (68.3%)
Cyanosis	3 (5.9%)	0 (0%)	3 (5%)
Shortness of breath	29 (56.9%)	9 (100%)	38 (63.3%)
Rhinorrhea	10 (19.6%)	2 (22.2%)	12 (20%)
Convulsion	4 (7.8%)	0 (0%)	4 (6.7%)
Malaise	34 (66.7%)	7 (77.8%)	41 (68.3%)
Diarrhea	8 (15.7%)	0 (0%)	8 (13.3%)
Vomiting	12 (23.5%)	0 (0%)	12 (20%)
Headache	15 (29.4%)	0 (0%)	15 (25%)
Agitation	0 (0%)	0 (0%)	0 (0%)
Confusion	0 (0%)	0 (0%)	0 (0%)
Clinical outcomes	51 (85%)	9 (15%)	60 (100%)
Male	35 (81.4%)	8 (18.6%)	
Female	16 (94.1%)	1 (5.9%)	

Table 5 Correlation between comorbid diseases and the clinical outcomes

	Lived	Died
Respiratory disease	4 (7.8%)	0 (0%)
Cardiovascular disease	6 (11.8%)	2 (22.2%)
Hypertension	16 (31.4%)	6 (66.7%)
Diabetes mellitus	16 (31.4%)	4 (44.4%)

4. DISCUSSION

This is a descriptive, prospective study on the clinical characteristics and outcomes of the COVID-19, including data on 60 patients who were transferred to Al-Shifaa Center from Baghdad Medical City emergency room and consultation clinic. From our results, we conclude that persons of any age can get severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, though another study reported that adults of middle age and older are greatly affected, and the elderly are more likely to have a severe disease (Wu and Mc Googan, 2020). In several reports of hospitalized patients with confirmed COVID-19, the age ranged from 49 to 56 years (Huang et al., 2020). In this study, we share a similar age group got mostly infected. Previously, old age has been stated as an important independent predictor of mortality in SARS and MERS (Choi et al., 2003; Hong et al., 2018). The present study confirmed that increasing age was associated with death in patients with COVID-19. We reported a greater number of males than females in the 60 cases of 2019-nCoV infection. Previously MERS-CoV and SARS-CoV both of these pandemics had also been found to infect more men than women (Channappanavar et al., 2017). The reduced susceptibility of females to viral infections could be accredited to the protection from X chromosome and sex hormones, which has an important role in innate and adaptive immunity (Jaillon et al., 2017). In a study describing hospitalized patients with COVID-19 pneumonia in Wuhan (Wang et al., 2020b), the most common clinical manifestations at the onset of illness were fever, fatigue, dry cough, anorexia, myalgias, dyspnea, sputum production. And this is the same range of clinical features reported in our study and comes in accordance with the clinical characteristics of a group of patients in New York City (Goyal et al., 2020). We identified a relationship with the acquisition of the COVID-19 in patients with hypertension, diabetes, cardiovascular and respiratory diseases and this the same to what reported in a meta-analysis enrolled a total of 1558 patients with COVID-19; they stated that hypertension diabetes, chronic obstructive pulmonary disease, cardiovascular disease, and cerebrovascular disease were independent risk factors associated with COVID-19 patients (Wang et al., 2020a). The meta-analysis agreed with our results where no correlation between increased risk of COVID-19 and liver disease, malignancy, or chronic kidney disease. Besides the respiratory symptoms, gastrointestinal symptoms nausea, and diarrhea have also been reported in our patients, which might be the presenting complaint. In systematic review research of studies reported gastrointestinal manifestations in patients with confirmed COVID-19, the pooled prevalence was 18% overall, with diarrhea, nausea, and vomiting, or abdominal pain reported in 13, 10, and 9%, respectively (Cheung et al., 2020). Up-to-the-minute, no specific treatment has been suggested for COVID-19 except for meticulous supportive care. At present, the approach to this disease is to control infection sources; it depends on individual protection precaution to decrease the risk of transmission; and quick diagnosis, isolation, and supportive management for affected patients. Antibacterial is ineffective. Moreover, no antiviral medications have been found to offer benefits for treating SARS and MERS (Wang et al., 2020c).

5. CONCLUSION

The infection with COVID-19 is more likely to infect older men with hypertension, diabetes, cardiovascular disease, and respiratory disease as significant risk factors for COVID-19 patients. The understanding of these factors can enhance defining those COVID-19 patients at higher risk, and allow a more targeted and approach to prevent those deaths.

Funding

Nil

Conflict of Interest

The authors declare that they have no conflict of interest.

Informed consent

Written & Oral informed consent was obtained from all individual participants included in the study. Additional informed consent was obtained from all individual participants for whom identifying information is included in this manuscript.

Ethical approval for human

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards (ethical approval number 7540 at 26/2/2020)

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Authors contribution

FadilAglabonyan designed the study, Abdulrazaq Abdulfatah Abdulrazaq, and Wathik Abduljabar Al-Rubayee responsible for data collection, Assad Al-waily analyzed the data, and Laith G. Shareef interpreted the result and wrote the manuscript.

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