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An Observational Study Of Coronavirus (Covid-19) In Iraqi Patients At Al-Shifa Medical Center In Baghdad's Capital, Al-Rusafa

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ABSTRACT

Objective: To evaluate the incidence of Coronavirus (COVID-19) in Iraq, at Al-Shifa Medical Center- Medical City, Baghdad.
Methods: This is a retrospective analysis that was performed for the period from 1 March to 30 April 2020. A handy random sample of 54 patients, comprising 40 males and 14 females, was taken from Al-Shifa Medical Center-Medical City, Bagdad. In different locations in the city of Baghdad and outside the capital. Their ages ranged from 20 to 74 years.
Results: The prevalence of CONVID-19 with positive real-time polymerase chain reaction (RT PCR) results was (87.04 per cent) negative (12.96 per cent) relative to the signs/symptoms of the disease recorded in the study (64.81 per cent). The highest proportion of male patients was between 42 and 52 years of age and hospitalization intervals were high-frequency (25, 46.3 per cent) for days (5-9) with (74.07 per cent) no need for a respiratory care unit and, overall, the frequency of death was 27.78 per cent and the rate of cure was 72.22 per cent.
Conclusion: In this observational study, the prevalence of CONVID-19 was higher in the mean age of 46.69 years, males had a higher incidence rate of disease than females and, overall, a viral outbreak in Baghdad-Al-Rusafa was high frequency relative to Baghdad-Alkarkh and outside the capital as well, with a death-to-cure ratio was (0.38).

Keywords: Coronavirus (COVID-19) outbreak, the incidence of COVID-19 in Al-Shifa Center-Medicinal City, Al-Rusafa, Bagdad.

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INTRODUCTION

The novel coronavirus is a characteristic 2019 infection (COVID-19) that triggered a disease identified as severe acute respiratory coronavirus syndrome (SARS-CoV-2; previously recognized as 2019-nCoV) that was first identified in Wuhan City, Hubei Province, China as a consequence of an epidemic of respiratory diseases induced by this virus [1]. This was first revealed to the WHO on 31 December 2019. On 30 January 2020, the WHO declared a pandemic of COVID-19 as a global health problem [2, 3]. Since 2009, the WHO advertised that the only one of a flu epidemic is H1N1 influenza, the WHO reported a pandemic of COVID-19 on 11 March 2020 [4]. Formerly, SARS-CoV-2 disease was pointed out as COVID-19 by WHO, originating from Coronavirus Disease 2019 as a recent name. In terms of community, location or animal correlation, the word was invented to avoid criminalizing the source of the virus [5, 6]. On 11 February 2020, the Coronavirus Research Group of the International Committee on Virus Taxonomy issued a statement saying confirming the official classification of the novel virus: serious acute respiratory disorder coronavirus 2 (SARS-CoV-2) [7]. On 3 April 2020, the Centers for Disease Control and Prevention (CDC) published a guideline that the general public, such as those without symptoms, should consider using face coverings in public places where social-distancing interventions are difficult to sustain to avoid the spread of COVID-19 [8]. Related to the CDC, populations at high risk of infection include individuals in areas with increased local transmission and healthcare professionals caring for COVID-19 patients, near partners of infected persons, and tourists returning from areas where local transmission has been reported [9]. The CDC has also given guidelines for individuals at significant risk of COVID-19-related problems, particularly older adults and people with severe underlying health problems (e.g. heart disease, diabetes, lung disease). These people should consider the following precautions: Stocking up on the materials needed, evade direct contact with sick people, clean your hands regularly, Stay home as often as necessary in areas where COVID-19 is spreading and Establish a strategy for illness [10].

Signs and symptoms:

COVID-19 occurrence varied from asymptomatic/mild symptoms of serious disease and fatalities. Signs can extend from 2 days to 2 weeks after exposure to the virus [11]. A randomized study of 181 reported cases of COVID-19 outside Wuhan, China, showed that the mean incubation period was 5.1 days and that 97.5 per cent of persons who experienced signs did so within 11.5 days of infection [12]. Wu and McGoogan recorded that of the 72,314 incidents reported to the Chinese Centers for Disease Control and Prevention (CCDC), 81 per cent were moderate (absent or moderate pneumonia), 14 per cent were serious (hypoxia, dyspnea, > 50 per cent of lung involvement during 24-48 hours), 5 per cent were serious (shock, respiratory failure, multi-organ dysfunction), and 2.3 per cent were deadly [13]. Popular signs include the following: Fever, cough, myalgia and fatigue, less common signs include the following: Headache, sputum

production, diarrhoea, malaise, shortness of breath/dyspnea and respiratory distress, pneumonia tends to be the most common severe manifestation of COVID-19. Total or partial loss of sense of smell (anosmia) has been identified as a possible clinical finding in persons finally diagnosed with COVID-19, but this has not been a characteristic in research studies, so its clinical significance is questionable [14]. Symptoms tend to be rare in children with infection, even though some children with serious COVID-19 infection were identified [15, 16].

Epidemiology:

As of about April 15, 2020, COVID-19 was been reported in more than 2 million individuals globally and has occurred in many more than 128,000 deaths. More than 180 countries have documented laboratory tests - confirmed cases of COVID-19 in all different continents except for Antarctica [17]. More than 609,000 cases of COVID-19 were officially confirmed in the United States as of 15 April 2020, ultimately resulting in more than 26,000 deaths [18]. As of about 26 March 2020, the United States has seen more recorded outbreaks than any other country around the world, like China and Italy [19].

Prognosis:

Recent reports identified COVID-19 as medically milder than MERS or SARS in terms of seriousness and incident fatality rate [20]. To date at least, the mortality incidence for COVID-19 tends to be about 2% [21]. Late in the epidemic, the WHO confirmed that serious cases had mainly been recorded in adults over 40 years of age with significant comorbidity and skewed towards men in China, although this trend could change [21]. COVID-19-related fatalities in China have mainly affected elderly people (≥60 years of age) and people with severe underlying medical conditions. The most frequently recorded fatalities in the United States were adults aged 85 years or older (10 per cent-27%), accompanied by adults over the age 65-84 years (3 per cent-11%). Adults between 55 and 64 years of age (1 percent-3 percent) and adolescents between 20 and 54 years of age (< 1 percent). No deaths or ICU admissions were recorded in persons 19 years of age or older as of 16 March 2020 [22]. The case-fatality rate in China has been found to vary from 5.8 per cent in Wuhan to 0.7 per cent in the rest of China [23]. In most instances, fatality rates occur for patients that are elderly or have underlying health problems (e.g. diabetes, cardiovascular disease, chronic respiratory disease, cancer, and hypertension) [24].

Management:

No unique antiviral therapy is indicated for COVID-19. Potentially infected patients should seek caring and supportive medical treatment to help relieve symptoms. In extreme cases, vital organ function should be assisted [25]. No vaccine is currently available for SARS-CoV-2. Avoidance is the principal method of deterrence. Numerous international initiatives to diagnose and test the efficacy of antivirals, immunotherapy, monoclonal antibodies and vaccines have rapidly evolved. Guidelines and pharmacotherapy articles for COVID-19 have been issued [26, 27]. It is challenging to properly analyze the abundance of knowledge that appeared about potential COVID-19 treatments in a few months from the beginning of 2020. A short but thorough guide on how to interpret the subsequent results of the research was provided by F. Perry Wilson, MD, MSCE. Using the concept of a case series of patients obtaining hydroxychloroquine plus azithromycin, he presents clinicians with a fast review of important evaluations [28].

THE AIM OF STUDY

This study aims to:

1. Documentation of the medical protocol for the diagnosis and treatment of suspected patients with Coronavirus (COVID-19) disease in this medical centre.
2. Monitoring the patients' data, critical cases requiring respiratory care unit (RCU), deaths owing to this malady and recovery cases via patient medical records.

Material and method:

The study was conducted on patients suspected of coronavirus acute respiratory syndrome who were admitted to Al-Shifa Medical Center in Baghdad's capital, Al-Rusafa. The examination was conducted by an internist physician from 1 March 2020 to 1 May 2020. In some patients' suspected with the acute respiratory syndrome coronavirus, the asymptomatic disease is diagnosed incidentally by a rapid screening test lab. In the medical centre, the occurrence of the COVID-19 varied from asymptomatic/mild symptoms to serious disease and fatalities. Signs of the disease can extend from 2 days to 2 weeks after exposure to the virus infection [11]. A total of Fifty-four patients were enclosed in the report, all male and female units within the age group of 20-74 years.

Tools of the Study:

All data from patients suspected with Coronavirus (COVID-19) were documented as: (Signs/ symptoms background, age of the patient, gender, smoker/ non-smoker patient, history of chronic illnesses, geographical patient location, contact with infectious persons, chest X-rays, chest CT scan, hospitalization duration with admission to respiratory care center (RCU), the patient's final state and laboratory diagnosis (Real-time polymerase chain reaction (RT PCR), Complete blood count (CBC test), renal function test and ABO blood groups).

Patient data collection confirmed by upper respiratory specimens will be obtained during the first few days after symptoms of the disease. Nasopharyngeal swab/washing is typically a processing method used to acquire specimens for examination. Nasopharyngeal specimens can bypass early infection; a better test can need to be collected by bronchoscopy. The serum is another route for the identification of COVID-19. Fast antigen testing could potentially have the benefit of fasting time for findings and low-cost identification of COVID-19 but are likely to suffer from low sensitivity based on experience with this process for influenza (Flu) viruses. Molecular techniques, real-time PCR approaches and hydrolysis probes. After extracting nucleic acids (separated reagents and systems), the extracts are passed to a real-time PCR thermo cycler (e.g. ABI 7500 Fast Dx Real-Time PCR Instrument) for amplification and identification of nucleic acid.

Statistical Analysis:

Version (23) of the statistical package for Social Science Package (SPSS) and (Excel 2010) was used for data input and data processing. The data were grouped and tabulated. Frequency data were analyzed using a chi-square independence test. A p-value of ≤ 0.05 is a significant value.

Study limitations:

1. Collection for larger samples was planned, but this number was limited to 54 samples due to unstable circumstances and lack of time-related exam times in addition to a comprehensive curfew at that time.
2. The incidence of Convid-19 was only evaluated once official patient data collection approvals have been obtained where the consultant physician examined the patient's data at Al-Shifa Medical Center.

RESULTS AND DISCUSSION

Table 1. Frequency Distribution of the categorical variables (n 54)			
Class: Age/ Year	***Count***	***Percentage***	***Chi-Square for Goodness of Fit P-Value***
20 - 30	**11**	**20.4**	***Chi^2 value* = 2.111 *P-Value* = 0.71533 *degrees of freedom (df)* = 4**
31 - 41	**9**	**16.7**	
42 - 52	**12**	**22.2**	
53 - 63	**8**	**14.8**	
64 - 74	**14**	**25.9**	
Class: Gender distribution	***Count***	***Percentage***	***P-Value***
****Male***	**40**	**74**	***Chi^2 value* = 12.519 *P-Value* = 0.0004** *degrees of freedom (df)* = 1**
***Female* **Male Female ratio* = 2.85**	**14**	**26**	
Class: Geographical distribution of the patients	***Count***	***Percentage***	***P-Value***
***Bagdad, the capital / Al-Rusafa**	**38**	**70**	***Chi^2 value* = 36.111 *P-Value* = < .00001** *degrees of freedom (df)* = 2**
Baghdad, the capital/ Al-Karkh	**13**	**24**	
Outside the capital Baghdad	**3**	**6**	
Class: Smoker and Non-Smoker	***Count***	***Percentage***	***P-Value***
Smoker	**22**	**41**	***Chi^2 value* = 1.852 *P-Value* = 0.17357 *degrees of freedom (df)* = 1**
Non-Smoker	**32**	**59**	
Class: In contact with an infected person	***Count***	***Percentage***	***P-Value***
No	**13**	**24**	***Chi^2 value* = 3.444 *P-Value* = 0.17867 *degrees of freedom (df)* = 2**
Unknown	**17**	**32**	
Yes	**24**	**44**	
Class: History of chronic illness	***Count***	***Percentage***	***P-Value***
Yes	**30**	**56**	***Chi^2 value* = 0.667 *P-Value* = 0.41422 *degrees of freedom (df)* = 1**
No	**24**	**44**	
Class: ABO Blood group	***Count***	***Percentage***	***P-Value***
A-	**7**	**13.0**	***Chi^2 value* = 7.926 *P-Value* = 0.339 *degrees of freedom (df)* = 7**
A+	**7**	**13.0**	
AB-	**8**	**14.8**	
AB+	**9**	**16.7**	
B-	**2**	**3.7**	
B+	**9**	**16.7**	
O-	**3**	**5.6**	
O+	**9**	**16.7**	
Total	**54**	**100.0**	
*****. P-Value is significant at the 0.01 level (2-tailed). *. P-Value is significant at the 0.05 level (2-tailed).***			
The result is not significant at p > 0.05. The result is significant or highly significant at p < 0.05.			

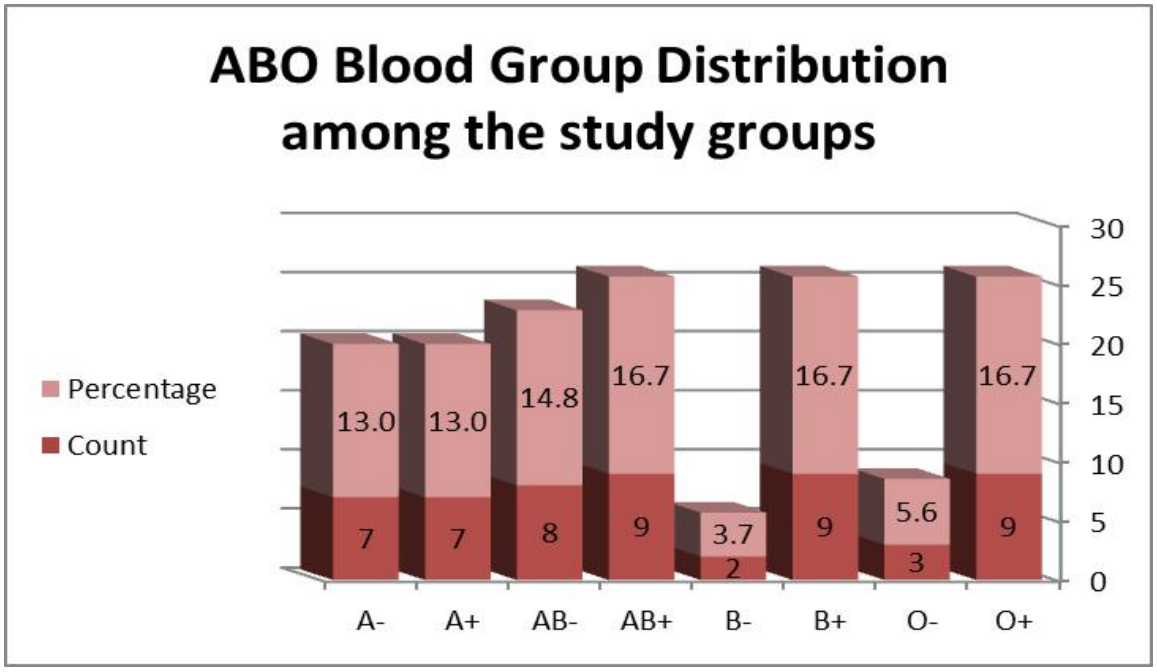

Figure 1. Frequency distribution of the ABO blood group in this study (count and percentage).

Table 1 and Figure 1. Represented frequency distribution (count and percentage) of the categorical variables (n 54). The outcomes of the cross-section study were of highly significant differences concerning gender and geographic distribution. With a high male infected ratio was 74% due to high exposure susceptibility to COVID- 19 infection, such findings refer to previous studies on a high male's infected ratio [29]. The geographic distribution in the current study was 70% in Al- Rusafa side of Baghdad as a result of high population and socioeconomic issues, these findings agree with previous studies about the geographic distribution [30]. Regarding age, smoking, contact with infected persons, history of study groups with chronic diseases and ABO blood groups of this observational study which were non-significant values with a great percentage frequency of the age range about between 64-74 years were 25.9% owing to immune status, most infected persons with COVID- 19 were non- smokers with an incident of 59%, the percentage of contact's history with others who were infected with COVID- 19 was 44% of the total number, 56% of patients with COVID- 19 infections in this study who were suffering from the history of chronic diseases. These outcomes concord with a frequency percentage results of the previous studies [31]. Ultimately, the majority of ABO blood group findings in this observational study were with dominance outcomes of A, B, AB and O Rh+ ABO blood groups. These results fit in with previous studies about a high-frequency percentage of A and B Rh + ABO blood groups and not fit in with a line of a low-frequency percentage of O Rh + ABO blood groups [32].

Table 2. Diagnostic characteristics of the study groups (n 54).			
Class: Signs/ Symptoms	***Count***	***Percentage***	***Chi-Square for Goodness of Fit P-Value***
***With**	**35**	**64.81**	***Chi^2 value = 4.741 P-Value = 0.02946* degrees of freedom (df) = 1***
Without	**19**	**35.19**	
Class: RT PCR	***Count***	***Percentage***	***P-Value***
***positive result**	**47**	**87.04**	***Chi^2 value = 29.63 P-Value < .00001** degrees of freedom (df) = 1***
negative result *positive / negative results ratio = 6.71	**7**	**12.96**	
Class: Chest X- Ray	***Count***	***Percentage***	***P-Value***
***with inflammatory changes**	**37**	**68.52**	***Chi^2 value = 7.407 P-Value = 0.0065** degrees of freedom (df) = 1***
without inflammatory changes	**17**	**31.48**	
Class: Chest CT	***Count***	***Percentage***	***P-Value***
with inflammatory changes	**29**	**53.70**	***Chi^2 value = 0.296 P-Value = 0.58621 degrees of freedom (df) = 1***
without inflammatory changes	**25**	**46.30**	
Total	**54**	**100.0**	
*****. P-Value is significant at the 0.01 level (2-tailed). *. P-Value is significant at the 0.05 level (2-tailed).***			
The result is not significant at p > 0.05. The result is significant or highly significant at p < 0.05.			

Table 2. Frequency distribution (count and percentage) of the categorical data of signs/symptoms, chest X-rays, chest CT scan and real-time polymerase chain reaction (RT PCR). Statistically, all highly significant results at p-level < 0.05 except for Chest CT-scan were non-significant findings at p-value > 0.05. Such findings are consistent with earlier research into recent coronavirus signs/ symptoms consisting of (35/54, 64.8%) symptomatic patients with high fever, dry cough, shortness of breathing and tiredness [33]. As well as diagnostic tests including (47/54, 87%) patients who tested positive on initial RT-PCR and (37/54, 68.5%) had abnormalities on baseline chest x-ray (CXR) [34]. Eventually, the highest number of patients with Chest CT scan inflammatory changes were (29/54, 53.70%). These findings correspond to previous studies on the indication of chest CT may prove beneficial in diagnosing COVID-19 in the clinical pathway [35].

Table 3. Categorical variables related to the state of the patients (n 54).			
Class: The therapeutic protocol used in Al-Shifa Medical Center	***Count***	***Percentage***	***Chi-Square for Goodness of Fit P-Value***
HCQ, Azithromycin, Tamiflu, Kaletra	14	25.93	*Chi^2 value* = 1.444 *P-Value* = 0.48567 *degrees of freedom (df)* = 2
HCQ, Azithromycin, Tamiflu	21	38.89	
HCQ, Azithromycin	19	35.19	
Class: Duration of therapy	***Count***	***Percentage***	***P-Value***
0-4 days	8	14.8	*Chi^2 value =30.074* *P-Value= <.00001*** *degrees of freedom (df)* = 4
**5-9 days*	23	42.6	
10-14 days	17	31.5	
15-19 days	5	9.3	
25-29 days	1	1.9	
Class: Hospitalization duration	***Count***	***Percentage***	***P-Value***
0-4 days	8	14.8	*Chi^2 value = 33.037* *P-Value = <0 .00001*** *degrees of freedom (df)* = 4
**5-9 days*	25	46.3	
10-14 days	15	27.8	
15-19 days	5	9.3	
25-29 days	1	1.9	
Class: Under the RCU	***Count***	***Percentage***	***P-Value***
Yes	14	25.93	*Chi^2 value* = 12.519 *P-Value* = 0.0004** *degrees of freedom (df)* = 1
**No*	40	74.07	
Class: The patient's final state	***Count***	***Percentage***	***P-Value***
Death	15	27.78	*Chi^2 value* = 10.667 *P-Value* < 0.00109** *degrees of freedom (df)* = 1
**Cured or recovered* **Death/ Cured ratio = 0.38*	39	72.22	
Total	**54**	**100.0**	
***. P-Value is significant at the 0.01 level (2-tailed).* **. P-Value is significant at the 0.05 level (2-tailed).*			
The result is not significant at p > 0.05. The result is significant or highly significant at p < 0.05.			

Table 3. Frequency percentage of the categorical variables to the status of patients in this study related to the therapeutic protocol used in the Al-Shifa Medical Center, duration of therapy, duration of hospitalization, under the Respiratory Care Unit (RCU) and, finally, the condition of the patient (recovered or died). Statistically, all the outcomes were highly significant differences in p-value < 0.01, except for the therapeutic protocol used in the Al-Shifa Medical Center where there were no significant differences in p-value > 0.05. The majority of patients spent 5- 9 days at the Al-Shifa Medical Centre with a 42.2 per cent ratio. Such findings refer to previous studies on the period of hospitalization of patients with COVID- 19 [36]. There was 74 per cent of patients were not admitted to RCU. These results are consistent with previous studies on RCU admission rates among patients with COVID- 19 infection [37]. Eventually, the survival rate among the admitted patients with COVID-19 was 72.2%. Such results were consistent with the previous study concerning the mortality studies of patients infected with COVID-19 [17]. As for the non-significant results of the therapeutic protocol at the Al-Shifa Medical Center, even many patients (38.89 per cent) received hydroxychloroquine, azithromycin and Tamiflu. These outcomes, in such accordance with previous studies about the treatment protocol of COVID- 19 [38].

Table 4. Descriptive statistics of the continuous variables (n 54).				
Variable	***Minimum***	***Maximum***	***Mean***	***± SD***

Age/ Year	21	74	46.69	16.65
Total leukocytes count: N (4.00-11.0 x 10^9/L)	3.5	26.2	9.32	5.19
PCV %: N (M 40-54%), (F 36-46%)	18.7	51.9	38.11	8.62
Hb g/dL: N (M 14-18), (F 12-16)	5.8	16.1	11.8	2.67
Platelet count: N (150-450 x 10^9/L)	108	509	227.1	88.77
Bl. Urea mmol/L: N (3.6- 7.1)	1.3	21.7	6.04	4.35
S. Creatinine mg/dL: N (M 0.6- 1.2), (F 0.5- 1.1)	0.40	6.20	1.58	1.48
SD: Standard deviation				
N: Normal reference, M: Male, F : Female				

Table 4. Represented the descriptive statistics of the continuous variables about the laboratory results of Total leukocytes count, Hematocrit percentage (PCV %), Hemoglobin levels (Hb g/dL), Platelet count and renal function test (blood urea levels and serum creatinine levels). In this data study, the mean age of the study groups was 46.69 ± 16.65, mean total leukocyte counts were 9.32 ± 5.19 with increased counts in some study groups, mean Hb levels were 11.8 ± 2.67 with decreased levels in some study groups, the mean blood urea levels were 6.04 ± 4.35 with elevated rates in certain research groups and, overall, the mean serum creatinine levels were 1.58 ± 1.48 with an increase in this study group. These abnormal observations were in lines along with the previous studies, about biochemical and hematological findings in the blood tests of Covid- 19 infected patients [39].

CONCLUSION

In this observational study, Convid-19 virus was a higher incidence in males than females (74 per cent) with a mean age per year (46.69 ± 16.65) and a male-to-female ratio was 2.85.

1- A higher incidence of the virus was found in Baghdad-Al-Rusafa (70 per cent) compared to Baghdad-Alkarkh and outside the capital.
2- The highest percentage of treatment duration in this medical centre was (42.6 per cent) within 5-9 days.
3- The death rate was 27.78 per cent and the cure rate was 72.22 per cent with a death-to-cure ratio (0.38).

Recommendation

1- Embracing education programs to enhance home quarantine awareness, social spacing and encourage improvements in health protection concerning viral infection and reduce its psychological consequences.
2- A knowledge-based regarding the effects of viral infection in the community - is significant and must be incorporated into mosques, markets, commercial, tourist facilities and office activities, as well as in schools and universities.
3- Health care providers need to pay more attention to this viral disease because of its high prevalence and psychological impact.
4- Further studies and emphasis are needed to elaborate on the advanced effects of viral infection, death causes and the effect of therapy used against such viral infections in both genders of different age groups.
5- The lack of complete reliance on the results of a rapid laboratory blood test (test strip) to detect cases of viral infection and relies on laboratory results for real-time PCR due to its high sensitivity and high specificity.
6- A need to raise the number of laboratory tests, especially in areas with low socioeconomic status and a high population.
7- Support and follow-up on research studies and medical reports provided by medical teams or professionals in all their medical specialities and improve the absorption ability of hospitals and health centres concerning the intensive care unit in terms of medical supplies and devices to save patients with heart disease or respiratory disease.

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Declaration: The authors don't have any financial [Financial competing interests include (but are not limited to): Receiving reimbursements, fees, funding, or salary from an organization that may in any way gain or lose financially from the publication of the article, either now or in the future, holding stocks or shares in an organization that may in any way gain or lose financially from the publication of the article, either now or in the future, holding, or currently applying for, patents relating to the content of the manuscript, receiving reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript] or nonfinancial [include (but are not limited to) political, personal, religious, ideological, academic, and intellectual competing interests], competing interests.

Conflict of Interest: All authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial

interest (such as personal relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

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