



ORIGINAL ARTICLE

Survey Study of Covid19 Infection in Kerbala City Iraq

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ABSTRACT

Background: The purpose of the current study detection COVID-19 virus infection percentage in Kerbala city and the methods used in diagnosis.

Methods: Data collection in period January 2020 to June 2020 form Covid19 patient and diagnosis infection in three methods Rapid test in primary health care centers , COVID19 antibody test and molecular.

Results: Current study found accuracy methods for CVID19 diagnosis was PCR then COVID19 antibody detection and last one rapid test (29.2, %33%, 44.9 %) in arrangement and there is relation between COVID19 infection with sex through percentage of infection the male with high percentage compare with female percentage (55.3%, 12.4%) and most period infected with COVID19 from 21- 30 years old then 31- 40, while the other period of age less percentage (27.1%, 19.6%).

Conclusion: The most accuracy method for COVID19 detection is PCR, then antibody detection and last one rapid test.

INTRODUCTION

In December 2019, an outbreak of pneumonia associated with the novel coronavirus disease (COVID-19) was reported in Wuhan, Hubei Province, China.^{1,2} The timing of the COVID-19 outbreak, before the annual Chinese Lunar New Year holiday, coincided with people returning to their family homes, resulting in several billion-person trips made by residents and visitors.³ In just 30 days, COVID-19 rapidly spread from a single city to the entire country and from there to other countries worldwide.^{4,5} On January 30, 2020, the World Health Organization (WHO) declared the outbreak a public health emergency of international concern.⁶

The first confirmed case of COVID-19 was reported in Al Najaf, located in the middle of Iraq for Iranian students studying Islamic studies.⁹

COVID-19 is a highly contagious disease. It mainly spreads from person to person through respiratory droplets, similar to the common cold and influenza viruses (i.e., through face-to-face contact accompanied by a sneeze or cough). It can also be transmitted through contact with the secretions of infected individuals. The role of fecal-oral transmission is yet to be determined for COVID-19, but it was found to occur during the severe acute respiratory syndrome (SARS) outbreak.⁷ The population is generally susceptible to the virus. Based on current epidemiological surveys, the latency period is usually 2-14 days (median 4 days), though longer cases have been noted.⁸ COVID-19 is contagious during the latency period. At the time of submission of this paper, targeted antiviral drugs and vaccines were not yet available for COVID-19.

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The diagnosis is made by performing a test on patients' biological samples.¹⁻³ The treatment isolates the patients and manages their clinical symptoms. In most cases, the spread between people occurs through the respiratory droplets emitted by coughing or sneezing.^{10,11}

International collaborative efforts have accelerated the development of COVID-19 vaccines. As of April 23, 2021, 91 candidate vaccines were in clinical development, and 184 were in preclinical development.¹² Evaluating the real-world COVID-19 vaccine performance is critical for understanding the risks and benefits of vaccination programs. Many factors impact real-world vaccine effectiveness (VE), including vaccine transportation and storage and how patients are vaccinated. In addition, the people who get the vaccine in clinical trials are often young and healthy and, therefore, different from those who will receive vaccines in the real world.¹³

METHODS

Study Design and Participants

The current study involved a survey study in Kerbala city, Iraq period from January 2020 to June 2020 for Covid-19 patient diagnosis in three methods: 1. rapid test in primary health care centers and COVID-19 antibody with PCR in Public Health Laboratory in Kerbala city.

Data Collection

Data from the current study were collected from two sides first, primary health care centers, any person who has a syndrome similar to covid19 disease was done for a rapid test, and take sample was then sent to the Public Health Laboratory to make PCR and COVID-19 antibody test with getting information through questionnaire involved type of test, sex, and age of the patient.

Statistical Analysis

Data were coded, validated, and analyzed using descriptive analysis was conducted, and data were represented as percentages and frequency. Chi-square and the Analysis of Variance (ANOVA) tests were applied to find the association between different variables. The probability value (p-value) of less than 0.05 was considered statistically significant.

RESULTS

A total of 95250 participants in the period from January 2020 to June 2020 for the current study made the three types of medical tests routine work for the Kerbala health office. Participants divided as sex to males and females and, according to age, divided to 10 group.

The result showed in Table 1 that the more accuracy method for COVID-19 diagnosis was PCR, then COVID-19 antibody detection, and lastly, one rapid test because there is a false positive result and interaction with the other disease.

In Table 2, results showed there is a relation between COVID-19 infection with sex through the percentage of

Table 1: Covid-19 infection in Kerbala government Iraq

Type of test	total	Positive	Negative	Percentage
Rapid test	95250	42812	52438	44.9%
Iges	95250	31463	63787	33%
PCR	95250	27821	67429	29.2%
p-value		0.00001**	0.0001**	

Table 2: Relation of Covid19 infection with sex

Sex	Total	Positive	Negative	Percentage
Male	41944	23198	18746	55.3%
Female	53306	6623	46683	12.4%
P value		0.00001**	0.00001**	

Table 3: Relation of Covid19 infection with age

Age	Total	Positive	Negative	Percentage
Less than 10 year	9776	1676	8100	6%
11-20 year	11939	3260	8679	11.7%
21-30 year	16663	7560	9103	27.1%
31-40 year	14884	5480	9404	19.6%
41-50 year	12435	3834	8601	13.7%
51-60 year	10749	1920	8829	6.9%
61-70 year	9613	1791	7822	6.4%
71-80 year	7231	1440	5791	5.1%
81-90	1960	860	1100	3%
More than 90	0	0	0	0%
Total	95250	27821	67429	100%
p-value		0.00001**	0.0001**	

* The percentage calculated from total No. of infection and positive No. of each age period

infection the male with high percentage compared to the female percentage of infection.

Table 3: Results showed the susceptible age period infected with COVID-19 from 21- 30 years old than 31- 40, while the other period of age less percentage of infection appeared through a percentage of infection.

DISCUSSION

Several studies have examined the knowledge level, attitude, and practice during previous epidemics such as Swine influenza Middle East respiratory syndrome coronavirus (MERS-CoV).^{14,15} The COVID-19 pandemic significantly impacted hospital resources and organizations worldwide.¹⁶ Several hospital departments shifted their work to the management of COVID-19 patients. The Young AIMN Group prepared the first international survey to appraise the different experiences of NM physicians and other healthcare professionals in their work. The present study aimed to perform a preliminary report of this first international survey.¹⁷

Regarding the assistance of patients with COVID-19 or suspected clinical symptoms (e.g., cough, fever), most departments received new indications and restrictions from each hospital. In particular, phone and on-site pre-triage were often implemented to evaluate the patients with active COVID-19

or suspected clinical symptoms, eventually candidate for NM examinations and therapies. Some differences could be found among the on-site triage tools (e.g. clinical evaluation or thermal scanner), probably due to different hospital resources and pandemic stages. According to our preliminary report, only a quote of the departments experienced patients with COVID-19 until March 31, 2020, or expect to assist patients with COVID-19 until May 31, 2020. Nevertheless, different COVID-19 prevalence and pandemic stages among countries might be considered. At the moment, when the assistance of patients with COVID-19 or suspected symptoms is required, a robust screening process for outpatients should be followed as suggested by recent main recommendations.^{18,19}

There is considerable variability in donor antibody testing with testing for neutralizing antibodies or non-neutralizing antibodies alone, or a combination of the two. There needs to be more consistency regarding the cut-off for antibody titer for acceptance as CCP or the use of pathogen inactivation. Individual units of CCP would be expected to have a range of viral neutralizing capacities depending on their characteristics, such as the dose, antibody titer, and antibody affinity, further complicating efficacy inferences.²⁰

Limitations

Recruiting a large sample of participants during this critical period is a strength to our study. On the other hand, our study had some limitations: First, the study lacks generalizability to the Iraqi population as most of our participants were from Kerbala city. Second, because data related to COVID-19 are evolving from data collection from Public health laboratories, there is a limitation in information about severity, treatment, and mortality.

REFERENCES

1. Zhu N, Zhang D, Wang W, Li X, Yang B, Song J, et al. A Novel Coronavirus from Patients with Pneumonia in China, 2019. *N Engl J Med* 2020 Feb 20;382(8):727-733. [CrossRef]
2. Li Q, Guan X, Wu P, Wang X, Zhou L, Tong Y, et al. Early Transmission Dynamics in Wuhan, China, of Novel Coronavirus-Infected Pneumonia. *N Engl J Med* 2020 Mar 26;382(13):1199-1207 [FREE Full text] [CrossRef] [Medline]
3. Ministry of Transport of the People's Republic of China. Big data! The travel volume predictions during Lunar New Year holiday in 2020 Jan 09 URL: http://www.mot.gov.cn/fenxigongbao/yunlifexi/202001/t20200109_3322161.html [accessed 2020-02-15]
4. Novel Coronavirus Pneumonia Emergency Response Epidemiology Team. [The epidemiological characteristics of an outbreak of 2019 novel coronavirus diseases (COVID-19) in China]. *Chinese Journal of Epidemiology* 2020 Feb 17;41(2):145-151 [FREE Full text] [CrossRef] [Medline]
5. Jernigan DB, CDC COVID-19 Response Team. Update: Public Health Response to the Coronavirus Disease 2019 Outbreak – United States, February 24, 2020. *MMWR Morb Mortal Wkly Rep* 2020 Feb 28;69(8):216-219 [FREE Full text] [CrossRef] [Medline]
6. World Health Organization. Statement on the second meeting of the International Health Regulations (2005) Emergency Committee regarding the outbreak of novel coronavirus (2019-nCoV). 2020 Presented at: Emergency Committee / WHO; Jan 30, 2020; Geneva URL: <https://tinyurl.com/rjdtx2k> [CrossRef]
7. Lee SH. The SARS epidemic in Hong Kong. *J Epidemiol Community Health* 2003 Sep 01;57(9):652-654 [FREE Full text] [CrossRef] [Medline]
8. Guan W, Ni Z, Hu Y, Liang W, Ou C, He J, China Medical Treatment Expert Group for Covid-19. Clinical Characteristics of Coronavirus Disease 2019 in China. *N Engl J Med* 2020 Apr 30;382(18):1708-1720 [FREE Full text] [CrossRef] [Medline].
9. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet*. 2020;395(10223):497–506.
10. The Lancet. COVID-19: fighting panic with information. *Lancet*. 2020; 395 (10224) :537.
11. Draft landscape of COVID-19 candidate vaccines. [publications/m/item/draft-landscape-of-covid-19-candidate-vaccines](https://www.who.int/draft-landscape-of-covid-19-candidate-vaccines) (accessed 27 April 2021). [https:// www. who. int/](https://www.who.int/)
12. Patel MM, Jackson ML, Ferdinands J. Postlicensure evaluation of covid-19 vaccines. *JAMA - J Am Med. Assoc.* 2020;324(19):1939-1940. doi:10.1001/jama.2020.1932.
13. Balkhy HH, Abolfotouh MA, Al-Hathloul RH, Al-Jumah MA. Awareness, attitudes, and practices related to the swine influenza pandemic among the Saudi public. *BMC infectious diseases*. 2010 Dec 1;10(1):42. (doi: 10.1186/1471-2334-10-42).
14. Alsahafi AJ, Cheng AC. Knowledge, attitudes and behaviours of healthcare workers in the Kingdom of Saudi Arabia to MERS coronavirus and other emerging infectious diseases. *International journal of environmental research and public health*. 2016 Dec;13(12):1214. (doi: 10.3390/ijerph13121214).
15. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet*. 2020;395(10223):497–506.
16. The Lancet. COVID-19: fighting panic with information. *Lancet*. 2020; 395 (10224):537.
17. LamWW, Loke KS, Wong WY, Ng DC. Facing a disruptive threat: how can a nuclear medicine service be prepared for the coronavirus outbreak 2020? *Eur J Nucl Med Mol Imaging*. 2020.
18. Buscombe JR, Notghi A, Croasdale J, Pandit M, O'Brien J, Graham R, Council and Officers of British Nuclear Medicine Society, et al. COVID-19: guidance for infection prevention and control in nuclear medicine. *Nucl Med Commun*. 2020; (7): 12- 20
19. Murphy M., L. Estcourt, J. Grant-Casey, S. Dzík . International Survey of Trials of Convalescent Plasma to Treat COVID-19 Infection. *Transfusion Medicine Reviews* 34 (2020): 151–157.
20. Magagnoli J, Narendran S, Pereira F, Cummings T, et al. Outcomes of hydroxychloroquine usage in United States veterans hospitalized with Covid-19. *medrxiv*. Apr 1 2020; (3): 223- 30. (doi: 10.1101/2020.04.16.20065920).