Mediterranean BioMedical Journals
Integrative Journal of Medical Sciences
2020, Volume 7, 271
DOI: 10.15342/ijms.7.271

CLINICAL STUDY

Clinical Manifestations of Symptomatic COVID-19 Patients in Kabul Province, the Capital of Afghanistan

Yousufi Hashmatullah [a], Noori Ahmad Zia [a], Naeemi Shoaib [b], Rasekh Hamidullah [a], Haem Rahimi Muzhda [a], Bahaduri Mohammad Aman [a]

[a] Department of Microbiology, Faculty of Pharmacy, Kabul University, Kabul, Afghanistan.
[b] Department of Pathology and Biochemistry, Faculty of Pharmacy, Cheragh Medical University, Kabul, Afghanistan.

ABSTRACT

Background: SARS-CoV-2 is a novel member of human coronavirus that is newly identified in Wuhan, Hubei, China. The COVID-19 pandemic has spread to over 213 countries and affected more than 36.9 million individuals and caused 1.06 million deaths worldwide.

Methods: This cross-sectional study conducted on 124 symptomatic COVID-19 patients in Kabul, Afghanistan. Demographic and clinical data collected using a standard form. Nasopharyngeal/oropharyngeal swab sample collected for viral detection. Data were analyzed using IBM SPSS statistics (version 21) software.

Results: Out of 124 patients, 88 (71%) were male and 36 (29%) were female. The mean age of patients was 41.2±17.07 years and the majority of patients 32 (25.8%) were in the age group of 20 – 29 and minority 3 (2.4) was over 79 years. On clinical presentation, most patients had ageusia (71.3%), fever (69.4%), headache (69.4%), sore throat (66.1%), myalgia (66.1%), cough (64.5%), weakness (63.7%), dyspnea (38.7%), and the fewer symptom was diarrhea (31.5%). 19 (15.3%) patients had Hypertension, 16 (12.9%) had cardiovascular disease, 8 (6.5%) had diabetes, 5 (4.0%) had cancer, 4 (3.2%) had chronic pulmonary disease, and 3 (2.4%) had liver disease. The mean duration for the presence of symptoms was 13.3±6.3 days. The fatality rate was 4%.

Conclusion: Our study reveals that males are more affected by COVID-19 than females and the young generation is more affected than elders. The most common symptoms are ageusia, fever, headache, sore throat, and myalgia, and the less common symptom is diarrhea.

KEYWORDS: SARS-CoV-2 ; COVID-19 ; Kabul ; Clinical Presentation ; Afghanistan.

Correspondence: Pr Yousufi Hashmatullah. Department of Microbiology, Faculty of Pharmacy, Kabul University, Kabul, Afghanistan. Email : hashmatullah_23@yahoo.com

INTRODUCTION

Coronaviruses (CoVs) are enveloped structured-viruses with a positive sense, single stranded ribonucleic acid genome, presenting pleomorphic capsids and have corona (*crown*) like projection due to presence of spike glycoproteins on its' surface [1]. A novel member of human coronavirus was newly identified in Wuhan, Hubei province, China in December 31st, 2019, after increased number of pneumonia cases with unknown etiology [2]. On 30th January 2020, the World Health Organization (WHO) declared COVID-19 a Public Health Emergency of International Concern[3,4]. On 11th February 2020 the World Health Organization (WHO) announced the disease caused by the new corona virus is called COVID-19 abbreviated for "corona virus disease 2019". Subsequently this novel corona virus was named Severe Acute respiratory syndrome – Corona Virus 2 (SARS-CoV-2) by International Committee on Taxonomy of Viruses (ICTV) [5]. The COVID-19 pandemic has spread to over 213 countries and affected more than 36.9 million individuals and caused 1.06 million deaths worldwide as of 9th October 2020 (https://www.worldometers.info/coronavirus). Based on the evidences, transmission routes of this virus include respiratory droplets and airborne transmission via human to human contact [3,5].

The incubation period is between 0 – 24 days with a mean about 3 – 9 days, revealing the fact that one becomes contagious before symptoms arise [6]. SARS- CoV-2 primarily targets the respiratory system which may lead to major complications in other organs as well depending on body condition, age, immune system and other risk factors of individuals [7]. COVID-19 may clinically present as one of these three main pictures: acute respiratory disease (ARD), pneumonia with different degrees of severity, and asymptomatic carriers [1]. Studies have shown that COVID-19 could induce mild fever, chills, myalgia, malaise, dry cough, dyspnea, nasal congestion, sore throat, and headache. Severe cases may present pneumonia, ARDS, sepsis, or septic shock [8-10]. The Afghanistan Ministry of Public health has documented 39,693 total COVID-19 cases from 113,839 samples as of October 9th, 2020. Total positive Sars – Cov -2 cases in Kabul province, is 15,115 as of 9th October, 2020 accounting for 38.07% of total cases. Mortality rate for cases in Afghanistan is 3.7% as of the abovementioned date [11].

The aim of this study was to analyze the clinical presentation and symptoms of 124 COVID-19 patients that had Reverse Transcriptase Polymerase chain reaction (laboratory) confirmed SARS-CoV-2 infection.

MATERIALS AND METHODS

A standard case report form designed, matching with WHO COVID-19 case definition and used for clinical and demographic data collection from COVID-19 patients in Kabul [11]. Age, gender, clinical signs and symptoms, underlying conditions, duration of disease, and outcome of the infection were recorded.

Viral RNA was extracted from nasopharyngeal and oropharyngeal swab sample collected in viral transport medium using Qiagen RNA extraction kit and then amplified using Qiagen diagnostic kit for SARS-CoV-2 (QIAstat-Dx), as per manufacturer's protocol.

Data were analyzed using IBM SPSS statistics v21.0.0 software. Categorical variables presented in numbers and percentages, and descriptive statistics are presented as range, mean and standard deviation (SD).

RESULTS

This study was conducted on 124 laboratory confirmed COVID-19 patient. Of the 124 patient, 88 (71%) were male and 36 (29%) were female. Over all patients age were ranged in 17-88 years with mean±SD of 41.2±17.07 years. Majority of patient 32 (25.8%) were in age group of 20 – 29 and minority 3 (2.4%) were over 79 years old.

On clinical presentation most patients manifested ageusia (71.3%), fever (69.4%), headache (69.4%), sore throat (66.1%), myalgia (66.1%), cough (64.5%), weakness (63.7%), dyspnea (38.7%), and diarrhea (31.5%). Comorbidities for COVID-19 were also a part of research where 19 (15.3%) patients had the history or ongoing Hypertension, 16 (12.9%) had cardiovascular disease, 8 (6.5%) with diabetes, 5 (4.0%) had cancer, 4 (3.2%) had Chronic pulmonary disease, 3 (2.4%) had liver disease, 1 (0.8%) had immunodeficiency. Only one patient (0.8%) had pregnancy during infection.

The duration range for the presence of the disease sign and symptoms were 3 – 34 days with the median and mode of 14 days and mean±SD of 13.3±6.3 days. The fatality rate for overall cases was 4% (5 patients). Based on age, range of mortality cases was 20 – 80 years with the mean±SD of 58.2±27.46. Of the fatal cases, 4 (80%) were male and only one (20%) was female. The most common clinical symptoms in fatal cases were sore throat (5; 100%), fever, cough, headache, and weakness (4; 80%).

Table 1. Clinical presentation of COVID-19 patients and underlying disorder in patient included in the study, Kabul-Afghanistan

	Numbers	Percentage
Age (Years)		
<20	8	6.5
20-29	32	25.8
30-39	28	22.6
40-49	24	19.4
50-59	18	14.5
60-69	5	4.0
70-79	6	4.8
>79	3	2.4
Total	124	100.0
Gender		
Male	88	71.0
Female	36	29.0
Total	124	100.0
Clinical presentation		
Ageusia	88	71.0
Fever	86	69.4
Headache	86	69.4
Sore throat	82	66.1
Myalgia	82	66.1
Cough	80	64.5
Weakness	79	63.7
Dyspnea	48	38.7
Diarrhea	39	31.5
Underlying disorder		
Hypertension	19	15.3
Cardiovascular disease	16	12.9
Diabetes	8	6.5
Cancer	5	4.0
Chronic pulmonary disease	4	3.2
Liver disease	3	2.4
Immunodeficiency	1	0.8
Pregnancy	1	0.8

DISCUSSION

The COVID-19 pandemic has spread to over 213 countries and affected more than 36 million individuals. The first SARS-CoV-2 case in Afghanistan was confirmed in Herat province on 24th February 2020. As of 9th October 2020, 15,115 positive cases were documented in Kabul accounting for 38.07% of all 39,693 positive cases in Afghanistan all provinces. Kabul Province, as Afghanistan's capital stands tall based on positive COVID-19 cases compared to other cities in this geographical region. Till date, only one study has been conducted about COVID-19 symptomatology and epidemiology from Herat province, another major city of Afghanistan. No systematic analysis of COVID-19 has been reported in Kabul as of right now. We undertook this

study, to better understand the clinical presentation and cases fatality rate in Kabul, Afghanistan.

Of the 124 included in the study, 71.0% were male and 29.0% were female resembles with Ministry of Public Health of Afghanistan data (69.97% male and 30.02% female) (Table 1). This finding is similar with a study in Wuhan, china (male; 73.3%)[12] and study in Herat, Afghanistan (male; 68.0%)[3].

We found out that the most common clinical symptom of COVID-19 disease in this study were ageusia (71.0%) which is similar to European study (78.9%)[13] and fever (69.4%) which is in occurrence to the study in Wenzhou city, Zhejiang, China; in which fever was (76.51%) [14]. The less common symptom found in this study was diarrhea (31.5%) which is higher than study in Wenzhou city, Zhejiang, China (7.38%) [14]. The reason for the latter discrepancy is probably due to the presence of other factors.

The occurrence of underlying disorder of our study is almost the same with Wuhan's study. In our study 15.0% of the patients had hypertension and 12.9% had cardiovascular disease while in Wuhan; 15.0% had hypertension and 15.0% had cardiovascular disease. However prevalence of diabetes amongst individuals in this study (6.5%) is less than study in Wuhan (20%). The reason for this difference is probably due to low prevalence of diabetes in Afghanistan than China [https://asiandiabetesprevention.org/what-is-diabetes/facts-and-figures].

The motility rate in this study was 4.0% which is close to 2.6% mortality rate in India [16], but much less than 15.0% mortality rate in Wuhan. The reason is probably due to difference in presentation of the disease in regions.

The mean age of fatal cases (58.2 years) was higher than overall mean age (41.2 years), representing that older age may increase the susceptibility of individuals diagnosed with COVID-19 to death. This result resembles with overall COVID-19 data documented by Ministry of Public Health of Afghanistan that described higher fatality rate amongst 50-69 years old age groups (15% of fatality cases). Sex distribution in death cases in this study has been shown to be in resemblances with documented data from Ministry of Public Health of Afghanistan showing higher incidences of COVID-19 caused death amongst men compared to women(74.5% male; 25,5% female).

There are several limitations of our study. As the sample size was small, our study may not reflect the whole picture of the COVID-19 disease in Kabul, Afghanistan. Although results of this study are promising as there has been unsignificant bias with Ministry of Public Health of Afghanistan documented data. Furthermore, we only studied symptomatic cases. We were unable to study the prevalence of the disease among asymptomatic carriers. On the other hand, we determined the duration of the disease based on removal of symptoms, not on detection of viral RNA due to source limitation.

CONCLUSION

SARS-CoV-2 is highly contagious virus. Our study reveals that males are more affected with COVID-19 than female and young generation is more affected than elders. This study demonstrates that the most common symptoms are ageusia, fever, headache, sore throat and myalgia, and the less common symptom is diarrhea. The fatality rate for COVID-19 in Kabul is 4.0% according to our study. We recommend further studies with large sample size to get a full picture of clinical presentation for COVID-19.

ACKNOWLEDGMENTS

We thank Dr. Zabiullah Ibrahimikhail and Dr. Milad Jobran for their great help in sample collection process.

AUTHORS' CONTRIBUTIONS

The participation of each author corresponds to the criteria of authorship and contributorship emphasized in the Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly work in Medical Journals of the International Committee of Medical Journal Editors. Indeed, all the authors have actively participated in the redaction, the revision of the manuscript, and provided approval for this final revised version.

COMPETING INTERESTS

The authors declare no competing interests with this case.

FUNDING SOURCES

None.

REFERENCES

[1] Xavier AR, Silva JS, Almeida JP, Conceição JF, Lacerda GS, Kanaan S. COVID-19: clinical and laboratory manifestations in novel coronavirus infection. Jornal Brasileiro de Patologia e Medicina Laboratorial. 2020;56.

[2] Mackenzie JS, Smith DW. COVID-19: a novel zoonotic disease caused by a coronavirus from China: what we know and what we don't. Microbiology Australia. 2020 Apr 8;41(1):45-50.

[3] OSMANİ K, SHAYAN NA, JOYA SA. Clinical Features of Patients with COVID-19 in Herat Province of Afghanistan.

[4] Jiang F, Deng L, Zhang L, Cai Y, Cheung CW, Xia Z. Review of the clinical characteristics of coronavirus disease 2019 (COVID-19). Journal of general internal medicine. 2020 Mar 4:1-5.

[5] Lovato A, de Filippis C. Clinical presentation of COVID-19: a systematic review focusing on upper airway symptoms. Ear, Nose & Throat Journal. 2020 Apr 13:0145561320920762.

[6] Siordia Jr JA. Epidemiology and clinical features of COVID-19: A review of current literature. Journal of Clinical Virology. 2020 Apr 10:104357.

[7] Yadaw AS, Li YC, Bose S, Iyengar R, Bunyavanich S, Pandey G. Clinical features of COVID-19 mortality: development and validation of a clinical prediction model. The Lancet Digital Health. 2020 Oct 1;2(10):e516-25.

[8] Baj J, Karakuła-Juchnowicz H, Teresiński G, Buszewicz G, Ciesielka M, Sitarz E, Forma A, Karakuła K, Flieger W, Portincasa P, Maciejewski R. COVID-19: Specific and Non-Specific Clinical Manifestations and Symptoms: The Current State of Knowledge. Journal of Clinical Medicine. 2020 Jun;9(6):1753.

[9] Hassan SA, Sheikh FN, Jamal S, Ezeh JK, Akhtar A. Coronavirus (COVID-19): a review of clinical

features, diagnosis, and treatment. Cureus. 2020 Mar;12(3).

[10] Afghanistan Ministry of Public Health. MoPH Data Warehouse - Dashboard: COVID-19 Afghanistan 2020 [updated 9 october, 2020. Available from: https://moph-dw.gov.af/dhisweb-dashboard/#/.

[11] World Health Organization. 2. Covid-19 case definition 2020 [Available from: https://www.who.int/docs/ default-source/coronaviruse/situation-reports/20200321-sitrep-61-covid-19.pdf.

[12] Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, Zhang L, Fan G, Xu J, Gu X, Cheng Z. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. The lancet. 2020 Feb 15;395(10223):497-506.

[13] Lechien JR, Chiesa-Estomba CM, De Siati DR, Horoi M, Le Bon SD, Rodriguez A, Dequanter D, Blecic S, El Afia F, Distinguin L, Chekkoury-Idrissi Y. Olfactory and gustatory dysfunctions as a clinical presentation of mild-to-moderate forms of the coronavirus disease (COVID-19): a multicenter European study. European Archives of Oto-Rhino-Laryngology. 2020 Apr 6:1-1.

[14] Yang W, Cao Q, Qin L, Wang X, Cheng Z, Pan A, Dai J, Sun Q, Zhao F, Qu J, Yan F. Clinical characteristics and imaging manifestations of the 2019 novel coronavirus disease (COVID-19): A multi-center study in Wenzhou city, Zhejiang, China. Journal of Infection. 2020 Feb 26.

[15] Zhou F, Yu T, Du R, Fan G, Liu Y, Liu Z, Xiang J, Wang Y, Song B, Gu X, Guan L. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. The lancet. 2020 Mar 11.

[16] Dey JK, Dey SK. SARS-CoV-2 Pandemic, COVID-19 Case Fatality Rates and Deaths per Million Populations in India. Journal of Bioinformatics, Computational and Systems Biology. 2020; 2(1):110.

[17] lymphoma: A case report and review of the literature. Case Rep Oncol Med 2013; 2013: 267389.