Original Article

Coronavirus Disease 2019: One Year Experience at Tertiary Care Cardiac Hospital

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Abstract:

Background: The Coronavirus Disease 2019 (COVID-19) pandemic is a significant challenge particularly for low and middle-income countries like Bangladesh. Interventions such as home isolation, frequent hand washing, wearing face mask, maintaining social distancing are difficult to implement in densely populated areas. The aim of the study was to delineate demographics, clinical manifestations, treatment modalities and outcomes of COVID-19 affected patients of our hospital.

Methods: This prospective observational study was carried out at National Heart Foundation Hospital & Research Institute of Bangladesh between 08 March 2020 to 07 March 2021. During this period all admitted patients who subsequently were diagnosed as COVID positive and health care personnel of this hospital, who experienced fever or respiratory symptoms or came in close contact with COVID-19 patients at home or their workplace & become COVID positive were included.

Results: During this one-year period a total of 769 COVID positive patients were detected in our hospital. Mean age of the patients was 48.16 ±15.63 years (range 1-92 years). Two third were male (64.9% vs 35.1%) and had multiple co-morbidities. One fifth of the patients were (19%) asymptomatic. The mean duration of onset of symptoms to test was 3.72±3.7 days. Most common symptoms were fever (65.3%), cough (37.1%), shortness of breath (33.6%) and fatigue (27.8%). Other symptoms were bodyache (18.6%), headache (16.6%), anosmia 16%), sore throat (12.1%), diarrhoea (6.8%), dizziness (5.3%), generalized itching (3.8%). Nearly two third of the COVID positive patients (63.2%) had a diagnosed cardiovascular disease at onset and remaining 36.8% patients presented with only COVID-19 disease. About 75% patients received ivermectin, 5.1% patients received favipiravir and 4.4% patients received remdesivir. Three fourth (74.38%) of patients were hospitalized and remaining one fourth (25.62%) patients were treated either in home isolation or in institutional isolation. Most of the patients recovered, with a case fatality rate of 3.5%. Diabetes, hypertension and age ≥50 years were the independent predictors of mortality.

Conclusion: Although most of the patients had good outcome the study revealed 3.5% case fatality. Male with multiple co-morbidities were predominantly affected by COVID 19. Fever, cough, shortness of breath and fatigue were common presenting symptoms.

Key words: *COVID-19, clinical features, treatment, in-hospital outcome, predictors of mortality*

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Introduction:

Like many other countries, Bangladesh has also been experiencing a public health crisis due to Coronavirus Disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2). As of March 07, 2021, about 117 million confirmed cases and 2.6 million deaths were reported worldwide[1]. The first COVID -19 positive patient was detected in Bangladesh on 8th March 2020. The first case of non-health care personnel (non-HCP) COVID-19 was confirmed in our hospital on 14th April and the first case of HCP on 29th April. By 7th March, SARSCoV-2 had caused 5,50,330 infections and 8,462 deaths in Bangladesh[2]. The common symptoms of the disease include fever, headache, bodyache, shortness of breath, dry cough, sore throat, and fatigue; some patients develop severe pneumonia, acute respiratory distress syndrome, thrombo-embolism, and multiple organ failure progressing to death. However, most affected individuals are healthy asymptomatic carriers or have minor symptoms[3]. SARS-CoV-2 not only involves lung, but may also affect the cardiovascular system[4-6], gastrointestinal system[7,8], central nervous system[9-11], renal system[12] and skin[13]. The SARS-CoV-2 protein characteristic spike binds to its cellular receptor, the angiotensin-converting enzyme 2 (ACE2), which is widely expressed in many cell types and organs like lung alveolar cells, nasal epithelium, cerebral cortex, digestive tract, kidney, gallbladder, testis, and adrenal gland[11]. The majority of patients with COVID-19 infection are thought to be paucisymptomatic and do not require hospitalization[14]. Hypertension, diabetes, cardiovascular disease, and pulmonary disease are the most common morbidities among COVID-19 patients[15]. There are many challenges in treatment strategies as there is currently no specific treatment for COVID-19. However, pharmacologic and non-pharmacologic symptom management and supportive care measures should be given to all patients with symptomatic COVID-19[15]. In spite of its high contagiousness the mortality rate is low. We previously analyzed COVID-19 infection among healthcare personnel[16]. The goal of the present study is to narrate the clinical characteristics, severity of disease at the time of their initial evaluation, treatment and outcome of a large cohort of patients diagnosed with COVID-19 over the initial one year since the first case was declared in Bangladesh.

Methods and Materials:

Study design, setting, and population

This prospective observational study was carried out in the non-COVID tertiary cardiac care hospital (National Heart Foundation Hospital & Research Institute, Dhaka, Bangladesh) from March 08, 2020 to March 07, 2021. All admitted patients, who were subsequently diagnosed as COVID positive and health care personnel of this hospital, who experienced fever or respiratory symptoms or came in close contact with COVID-19 patients at home or their workplace & later became COVID positive were included in this study. Epidemiological, clinical characteristics, treatment and outcomes data were obtained from data collection forms. The study was approved by the Ethics Review Committee of National Heart Foundation Hospital & RI (N.H.F.H. & R.I. 4-14/7/AD-1105) and written informed consent was obtained from all patients or patient's attendance.

Definition and variables

A confirmed case of COVID-19 was defined as having a positive result through real-time reverse-transcriptase-polymerase-chain-reaction (RT-PCR) assay of naso-pharyngeal swab specimens[17]. We studied confirmed COVID-19 cases only. Demographic information included gender, age, risk factors and co-morbidities (diabetes mellitus, hypertension, smoking, dyslipidemia, obesity, cardiovascular disease, cerebro-vascular disease, chronic obstructive pulmonary disease /bronchial asthma (COPD/BA), chronic kidney disease, pregnancy). The degrees of severity of COVID-19 were classified as mild, moderate, severe, and critical ill[18,19]. Mild type was defined as have mild clinical symptoms without any imaging findings of pneumonia. Moderate type was defined as clinical symptoms (fever or other respiratory symptoms) with imaging findings of pneumonia. Patients with severe type had any of the following parameters: (I) respiratory distress, respiratory rate ≥30 times/min; (II) oxygen saturation ≤93% at rest. Also patients showing a rapid progression (>50%) of chest imaging within 24–48 hours was regarded as severe type. Patients with critical ill type had to meet any of the following standards: (I) respiratory failure requiring mechanical ventilation; (II) shock; (III) complicated extrapulmonary organ failure requiring care in the intensive care unit. The case fatality rate (CFR) was defined as the percentage of the cumulative number of deaths divided by the total number of laboratory-confirmed COVID-19 infections[20].

Nasopharyngeal swabs collection process

Using a standardized technique, trained doctors or laboratory technicians obtained the nasopharyngeal swabs from patients. After collection, swabs were placed in a transport medium and delivered to the laboratory. Diagnosis of COVID-19 was confirmed by real-time reverse transcription-polymerase chain reaction assay.

Statistical analysis

Categorical variables were presented as numbers and percentages and continuous data as mean and standard deviation. Binary logistic regression was used to identify the predictors of mortality. Variables significantly related to in-hospital outcome such as mortality in univariate analysis were included in a binary logistic regression model with the forward method to identify independent predictors of the mortality. A two-sided p value <0.05 was considered statistically significant. All analyses were performed using SPSS statistical software version 16.0 (SPSS Inc., Chicago, IL, USA).

Results:

During one year period a total of 769 patients were infected by SARS-CoV-2. Mean age of the patients was 48.16 ±15.63 years (range 1-92 years), of whom 539 (70.1%) were non-HCP and 230 (29.9%) were HCP. Most of the patients were male (64.9% vs 35.1%). Baseline characteristics of COVID-19 patients are shown in Table I.

Table-I

Baseline characteristics of COVID-19 patients (n=769)

Variables	Mean±SD/ Frequency	Percentage
Age (Mean±SD) in years	48.16 ±15.63	
Gender		
Male	499	64.9
Female	270	35.1
Patients category		
Non-HCP	539	70.1
HCP	230	29.9
Risk factors & co-morbidities		
HTN	399	51.9
DM	320	41.6
Smoking	242	31.5
Dyslipidemia	296	38.5
Cardiovascular disease	452	58.8
COPD/BA	54	07.0
Obesity	263	34.2
CKD	247	32.1
Pregnancy	08	01.0
Number of co-morbidities		
0	143	18.6
1	128	16.6
>1	498	64.8

COVID-19: coronavirus disease 2019; HCP: healthcare personnel; non-HCP: non-healthcare personnel; SD: standard deviation; HTN: hypertension; DM: diabetes mellitus; COPD: chronic obstructive pulmonary disease; BA: Bronchial asthma; CKD: chronic kidney disease.

Among the infected, 143 (18.6%) patients did not have any pre-existing comorbidities. Cardiovascular disease (58.8%), hypertension (51.9%) and diabetes mellitus (41.6%) were the most prevalent comorbidities. Other comorbidities are dyslipidemia (38.5%), obesity (34.2%), smoking (31.5%), chronic kidney disease (32.1%) and chronic obstructive pulmonary disease/bronchial asthma (7%). Most of the patients had multiple co-morbidities (Figure 1).

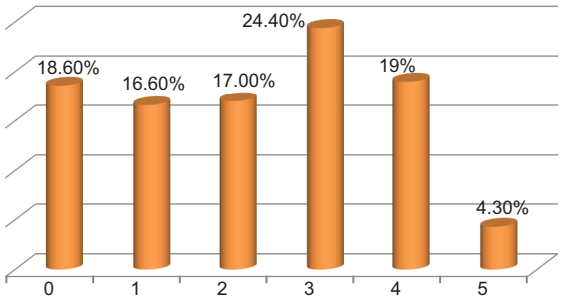

Fig.-1: *Bar diagram showing number of co-morbidities of COVID-19 patients (n=769).*

COVID-19: coronavirus disease 2019

It was noted that the infection rate was highest in the month of July during the early stage of the pandemic in Bangladesh. Subsequently, the infection rate plateaued in our hospital (Figure 2).

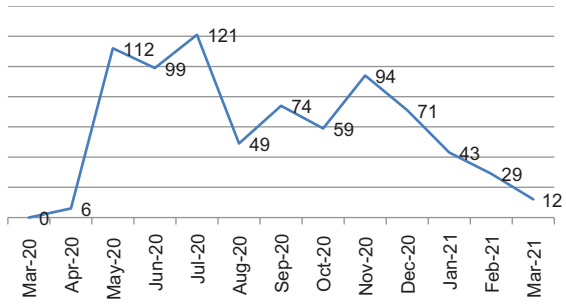

Fig.-2: *Bar diagram showing month wise distribution of COVID-19 patients (n=769)*

COVID-19: coronavirus disease 2019

About 81% of the patients were symptomatic and 19% patients were asymptomatic. The mean duration of onset of symptoms to test was 3.72±3.7 days. Patients had clinical manifestations of fever (502 [65.3%] patients), cough (285 [37.1%] patients), shortness of breath (258 [33.6%] patients), fatigue (214 [27.8%] patients), bodyache (143 [18.6%] patients), headache (128 [16.6%] patients), anosmia (123 [16%] patients),

sore throat (93 [12.1%] patients), diarrhoea (52 [6.8%] patients), dizziness (41 [5.3%] patients), generalized itching (29 [3.8%] patients), vomiting (27 [3.5%] patients) nausea (20 [2.6%] patients), anorexia (15 [2.0%] patients), abdominal pain (10 [1.3%] patients) and numbness (10 [1.3%] patients). Clinical characteristics of 769 confirmed COVID-19 patients are outlined in Table II. Most of the patients had good left ventricular function (64%).

Table-II

Clinical characteristics of COVID-19 positive patients (n=769)

Variables	Frequency	Percentage
Clinical presentation		
Symptomatic	630	81.1
Asymptomatic	139	18.9
Presenting symptoms		
Fever	502	65.3
Fatigue	214	27.8
Cough	285	37.1
Bodyache	143	18.6
Headache	128	16.6
Anosmia	123	16.0
Sore throat	93	12.1
Shortness of breath	258	33.6
Diarrhea	52	6.8
Dizziness	41	5.3
Generalized itching	29	3.8
Vomiting	27	3.5
Nausea	20	2.6
Anorexia	15	2.0
Abdominal pain	10	1.3
Numbness	10	1.3
Left ventricular ejection fraction		
Good	492	64.0
Mild	165	21.4
Moderate	92	12.0
Severe	20	2.6

COVID-19: coronavirus disease 2019.

Most of the patients (63.2%) had a cardiac diagnosis: Acute coronary syndrome [ST-segment elevation myocardial infarction (13.4%); non-ST segment elevation myocardial infarction (10.6) & unstable angina (7.9%)]; chronic coronary syndrome (22.8%); ischemic cardiomyopathy (2.1%); valvular heart disease (3.6%); sinus & atrio-ventricular node disease (1.1%), congenital heart disease (1.3%) and dilated cardiomyopathy (0.4%). Remaining 36.8% patients had only COVID-19 disease. All patients were treated in isolation. Oxygen therapy (low flow, high flow) was given when required. Prone positioning was advised for all patients. Treatment outline is given in Table III. Most of the patients received ivermectin (576 [74.9%]). Only four (0.5%) patients received hydroxy-chloroquine at the early period of COVID-era. Total 39(5.1%) patients received favipiravir (1600 mg on day 1 followed by 600 mg 12 hourly from day 2 to day 10) and 34(4.4%) patients received remdesivir (200 mg IV infusion [within 30 min-2 hours] on day 1 followed by 100 mg infusion within [30 min to 2 hours] from day 2 to day 5). One (0.1%) patient was also treated by 2 doses of tocilizumab (8 mg/kg [max: 800 mg/dose]) and 1 dose of convalescent plasma therapy due to cytokine storm.

Table-III

Distribution of treatment of COVID-19 patients (n=769)

Variables	Frequency	Percentage
Antibiotics		
IV	123	16.0
Oral + IV	65	8.4
Oral	498	64.8
Not received	83	10.8
Antibiotics		
Single	516	67.1
Double	170	22.1
Not received	83	10.8
Steroids (oral & IV)	56	7.3
Favipiravir	39	5.1
Remdesivir	34	4.4
Ivermectin	576	74.9
Hydroxy-chloroquine	4	0.5
Enoxaparine	483	62.8
Rivaroxaban	485	63.1
Tocilizumab	1	0.1

COVID-19: coronavirus disease 2019; IV: intravenous.

Regarding antibiotic therapy, 516 (67.1%) patients were treated with a single antibiotic and 170 (22.1%) patients were given combination therapy. Rest of the patients (10.8%) did not require antibiotic therapy. The antibiotics used generally covered common pathogens. The antibiotics used were doxycycline, macrolide, cephalosporins, fluoroquinolones, carbapenems and β-lactamase inhibitors. Regarding oral antibiotic treatment, 275 (35.8%) patients were treated by azithromycin and 341 (44.3%) patients by doxycycline. Most of the patients received either ivermectin plus azithromycin or ivermectin plus doxycycline combination. The duration of antibiotic treatment was 5–10 days. Around 56 (7.3%) patients were also treated with methylprednisolone and

dexamethasone for 3–7 days. Low molecular weight heparin was used in 483 (62.8%) patients and newer oral anticoagulant (rivaroxaban 10 mg once daily for 1 month) was used in 485 (63.1%) patients. We administered vitamin C, vitamin D_3 and zinc to most of the patients.

Total 572 (74.38%) patients were hospitalized and remaining 197 (25.62%) patients were treated either in home isolation or in institutional isolation. Regarding disease severity, 18.1% patients had asymptomatic disease, 67.3% had mild disease; 6.6% had moderate disease; 6.2% had severe disease and 1.8% were critically ill. Case fatality rate (CFR) was 3.5% (Table IV).

Table-IV
In-Hospital outcome of COVID-19 patients (769)

Variables	Frequency	Percentage
Hospitalization	572	74.38
Home isolation	197	25.62
Disease severity		
Asymptomatic	139	18.1
Mild	517	67.3
Moderate	51	6.6
Severe	48	6.2
Critical ill	14	1.8
Mortality	27 1	3.5

COVID-19: coronavirus disease 2019.

Table V shows the univariate analysis of in-hospital outcome of study population. Age more than 50 years, non-health care personnel, presence of cardiovascular disease, Left ventricular ejection fraction (LVEF) category, disease severity and diabetes mellitus significantly related with in-hospital mortality.

Among 769 patients, 27 (3.5%) patients died. Univariate analysis showed several factors were significantly related with in-hospital mortality. Based on these variables, binary logistic regression using the forward method was performed, and we found that diabetes mellitus, hypertension and age more than 50 years were the independent predictor of mortality (Table VI).

Table-V
Distribution of factors associated with in hospital outcome of study population (n=769)

Variables	Outcome		P value*
	In hospital deathf(%)#	Recovered f(%)#	
Age group			
<50 Y	04 (14.8)	364 (49.1)	0.000
>50 Y	23 (85.2)	378 (50.9)	
Gender			
Male	20 (74.1)	479 (64.6)	0.210
Female	07 (25.9)	263 (35.4)	
Non-HCP/HCP			
Non-HCP	26 (96.3)	513 (69.1)	0.001
HCP	01 (03.7)	229 (30.1)	
CVD			
Present	21 (10.2)	311 (41.9)	0.030
Absent	06 (0.6)	431 (58.1)	
Obesity			
Non obese	19 (70.4)	487 (65.6)	0.388
Obese	08 (29.6)	255 (34.4)	
LVEF Category			
Severe LV Dysfunction	03 (11.1)	17 (02.3)	0.007
Moderate LV Dysfunction	05 (18.5)	87 (11.7)	
Mild LV Dysfunction	08 (29.6)	157 (21.2)	
Good Function	11 (40.7)	481 (64.8)	
Disease Severity			
Asymptomatic	01 (03.7)	138 (18.6)	0.000
Mild	03 (11.1)	514 (69.3)	
Moderate	01 (03.7)	50 (06.7)	
Severe	13 (48.1)	35 (04.7)	
Critically ill	09 (33.3)	05 (0.70)	
Diabetes Mellitus			
Diabetic	20 (74.1)	300 (40.4)	0.001
Non diabetic	07 (25.9)	442 (59.6)	
Blood Pressure			
Hypertensive	13 (48.1)	386 (52.0)	0.420
Normotensive	14 (51.9)	356 (48.0)	

HCP: healthcare personnel; non-HCP: non-healthcare personnel; CVD: cardiovascular disease; LVEF: left ventricular ejection fraction. # Value in the parenthesis shows the corresponding row percentage; *Chi square test to find out significance.

Table-VI

Multivariate analysis of in hospital outcome of study population (n=769)

	Wald	Sig.	Exp(B)	95.0% C.I. for Exp(B)	
				Lower	Upper
Age ≥50 years	4.457	0.035	0.281	0.086	0.913
Gender Male	0.104	0.747	1.167	0.456	2.986
Non-HCP/HCP	3.705	0.054	9.411	0.960	92.260
CVD	1.964	0.161	2.206	0.730	6.668
Obese	0.365	0.546	1.311	0.545	3.155
LV Dysfunction	0.634	0.426	0.702	0.294	1.676
Disease Severity	3.670	0.055	0.136	0.018	1.047
DM	5.861	0.015	0.314	0.123	0.802
HTN	7.147	0.008	3.112	1.354	7.153
Constant	0.777	0.378	8.074		

a. Variable(s) entered on step 1: Age ≥50 years, Gender (Male), NOHCP/HCP, CVD, Obese, LV Dysfunction, Disease severity, DM, HTN.
HCP: healthcare personnel; non-HCP: non-healthcare personnel; CVD: cardiovascular disease; LV: left ventricular; DM: diabetes mellitus; HTN: hypertension; Sig.: significant; C.I.: confidence interval; Exp: exponential.

Discussion:

Important findings of this study are: 1) Most of the patients were male; 2) Most of the patients had multiple co-morbidities; 3) Around 19% patients had asymptomatic presentation; 4) Most common symptoms of COVID-19 were fever, cough & shortness of breath; and 5) Most of the patients had mild disease with a low mortality rate (3.5%).

Our study was based in a large tertiary cardiac care hospital in Dhaka, Bangladesh. Many COVID-19 affected patients present with cardiovascular symptoms. Also, many cardiac patients have underlying COVID-19 infection. Our hospital is a non-COVID hospital. However, during the pandemic many patients were admitted who were subsequently diagnosed with COVID-19. Undoubtedly taking care of these non-HCP put the HCP of our hospital at risk of becoming infected with COVID-19.

Analysis of 207,079 RT-PCR positive patients in Argentina showed mean age of the patient 42.9±18.8 years and 50.0% were males[17]. Most common symptoms were fever, cough, headache and sore throat. Death or intensive care unit admission were independently associated with older age, male, coma, dyspnea or tachypnea, and seizures, with underlying co-morbidities such as immunodeficiency, chronic renal failure, and liver disease showing the strongest effects. The burden of SARS-CoV-2 infection among healthcare personnel was 10.6%, The total case fatality rate was 5.3%.

Meta-analysis of sixty studies included a total of 59,254 patients from 11 countries[21] and detected the most common symptoms in patients with SARS-CoV-19 infection were fever, cough, muscle aches and/or fatigue and dyspnea. Overall, the male/female ratio was 1.08. All-cause mortality was 0.3%. Epidemiological studies showed that mortality was higher in males and elderly patients.

Summary of a report of 72 314 cases from the Chinese Center for Disease Control and Prevention[22] showed among a total of 72 314 case records, 44 672 were classified as confirmed cases of COVID-19 (62%) and asymptomatic cases (1%). Most case patients were 30 to 79 years of age (87%). Most cases were classified as mild (81%). However, 14% were severe and 5% were critical. The overall case-fatality rate (CFR) was 2.3%. Infection rate among health care personnel were 3.8%.

Result from five retrospective clinical studies[3], which included a total of 1556 hospitalized patients with COVID-19 and showed 57.5% were male and mean age of the patients 49.1 years. Common symptoms were fever, cough and fatigue. Critical cases with complications were 9%, intensive care unit admission was required in 7.3%, invasive ventilation in 3.4%, and mortality was 2.4%.

Clinical and epidemiological characteristics of 1420 European patients with mild-to-moderate coronavirus disease 2019[14] showed 67.7% were females and 30.7% patients were HCP. The mean age of patients was 39.17±12.09 years. The most common symptoms were headache, loss of smell, nasal obstruction, cough, asthenia, myalgia, rhinorrhea, gustatory dysfunction and sore throat. Fever was reported by 45.4%. The prevalence of symptoms significantly varied according to age and sex. Young patients more frequently had ear, nose and throat complaints, whereas elderly individuals often presented fever, fatigue and loss of appetite. Loss of smell, headache, nasal obstruction and fatigue were more prevalent in female patients.

Analysis of eighty articles[15] included a total of 417 patients with a mean age of 48 years. The most common clinical manifestations were fever, cough, dyspnea, and myalgia or fatigue. Less common clinical manifestations included nausea or vomiting, dizziness, rhinorrhea, and chills. Hypertension, diabetes, cardiovascular disease, and pulmonary disease were the most common morbidities among COVID-19 patients.

Analysis of 140 hospitalized COVID-19 patients in Wuhan[23] revealed 50.7% of patients were male with an overall median age of 57.0 years. Fever, cough and fatigue were the most common symptoms in COVID-19 patients. More than 1/3 of the patients had chest tightness or dyspnea and gastrointestinal symptoms such as nausea, diarrhea, and anorexia. Hypertension and diabetes mellitus were the most common comorbidities.

Retrospective, single-center case series of the 138 hospitalized patients with confirmed novel coronavirus–infected pneumonia in Wuhan, China showed[24] the median age of the patients was 56 years. Common symptoms were fever, fatigue and dry cough. The overall mortality rate was 4.3%.

A cohort study[25] on 201 Bangladeshi patients was done in Combined Military Hospital, a tertiary level hospital in Dhaka, Bangladesh from April 2020 to May 2020. Mean age of the patients was 32.2±2 years and 90% were male. Common symptoms are fever, cough, headache, myalgia, sore throat, malaise, respiratory distress. Asymptomatic cases were 4.5%. Death rate was 1% which was associated with comorbidity of CKD.

Mean age of our study population was 48 years, which is consistent with other studies[3,15]. However, in some studies[14,17,25] mean age of the patients was less than our study and some other studies, median age was greater than our studies (56-57 years)[23,24]. Male were predominant in our study as also in other studies [3,21,23,25].

The COVID-19 pandemic has shown a striking gender bias with more cases and a higher mortality rate in men than in women[26]. Increased male susceptibility might be explained by biological and behavioral factors. Biological factors include men's high level of testosterone that inhibits antibody production, and the presence of angiotensin-converting enzyme 2 (ACE2) receptors (cell receptors which play an essential role in SARS-CoV-2 entry) that facilitate viral replication[27]. Similarly, behavioral and lifestyle factors include men's higher rates of smoking and low level of hand-washing practices [28], although there is no clear evidence these behavioral factors have any impact on COVID-19 transmission.

Most common symptoms in our study were fever, cough, shortness of breath and fatigue which are almost consistent with other studies[3,15,17,21-24]. In contrast to our study, one European study[14] showed female predominance and the most common symptoms were headache, loss of smell, nasal obstruction, cough, asthenia, myalgia, rhinorrhea, gustatory dysfunction and sore throat.

As COVID-19 involves multisystem, it also affects olfactory and gastrointestinal tract (GIT). In our study, 16% patients developed anosmia. In one of the first studies from China[10], anosmia was mentioned to affect only about 5.1% of COVID-19 patients. Another study from France reported 47% patients with confirmed COVID-19 had anosmia[11]. The pathophysiological mechanism underlying the occurrence of anosmia is still not well-understood, but two explanations have been proposed[12]. The first hypothesis suggests peripheral viral involvement. Another hypothesis, currently the most widely accepted, suggests the direct changes to the central nervous system by the virus[12]. SARS-CoV-2 infection is strongly associated with the development of anosmia , especially in females and those with fever[12].

In our study, diarrhea (6.8%) was the most common GIT symptom. Other symptoms were nausea, vomiting, altered taste and abdominal pain. SARS-CoV-2 infects the GI tract *via* its viral receptor angiotensin converting enzyme II, which is expressed on enterocytes of the ileum and colon[7]. Viral ribonucleic acid (RNA) has also been isolated from stool specimens of COVID-19 patients, which raised the concern for fecal-oral transmission in addition to droplet transmission[7].

The largest cases of patients (74 patients) with COVID-19 with GI symptoms outside Wuhan showed its novel characteristics of increased family clustering and liver

injury, severe/critical tendency and higher rate of body temperature >38.5°C [8]. Among enrolled 651 patients, 74 (11.4%) presented with at least one gastro-intestinal symptom (nausea, vomiting or diarrhoea)[8].

In our study, most cases were classified as mild which is consistent with other studies[3,14,21,22,25]. A total of 8096 severe acute respiratory syndrome (SARS) cases and 774 deaths across 29 countries were reported for an overall CFR of 9.6%[22]. Middle East respiratory syndrome (MERS) is responsible for 2494 confirmed cases and 858 deaths across 27 countries for a CFR of 34.4%[22]. Despite much higher CFRs for SARS and MERS, COVID-19 has led to more total deaths due to the large number of cases. In our study, case fatality rate was 3.5% which is comparable with other studies[3,22,25].

Asymptomatic infection is often understood as detection of SARS-CoV-2 by RT-PCR, in the absence of a clinical illness compatible with COVID-19[29]. Asymptomatic transfer leads to lower prevalence estimates and higher transmission rates in the community. Various reports worldwide showed various COVID-19 asymptomatic case rates diverse from 1.2% to 51.4%[30]. In our study, 18.9% patients had asymptomatic infection. Public health measures, including quarantining in the community, frequent hand washing, maintaining social distancing, wearing mask, to trace close contacts of those testing positive for COVID-19 as well as timely diagnosis and strict adherence to universal precautions in health care settings, are critical in controlling COVID-19.

Our study has some limitations: First, it is a single centre study. So, it may not reflect the true scenario of the entire country. Second, it is non-COVID dedicated hospital. Only patients with cardiac symptoms were admitted. Third, cardiac manifestations of COVID-19 could not be evaluated as almost all non-HCP were cardiac patients.

Conclusion:

Regarding prevalence of COVID 19

Male were predominant with multiple co-morbidities. Most common symptoms were fever, cough, shortness of breath and fatigue. Most patients had good outcome. Asymptomatic cases of SARS-CoV-2 can be unknown carriers magnifying the transmission of COVID-19. Thus, mask wearing, maintaining social distance, extensive testing for identification and the quarantine of infected asymptomatic individuals are essential to curb this pandemic. Diabetes, hypertension and age ≥50 years were the independent predictors of mortality.

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