



DEMOGRAPHY, CLINICAL PROFILE AND OUTCOME OF 100 CASES OF COVID-19: A CROSS SECTIONAL OBSERVATION IN DHAKA

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ABSTRACT

Objective: From late December'19 till the end of August 2020, in these nine months, the world has lost more than eight hundred thousand people due to the COVID-19 pandemic. Clinical data on COVID-19 in Bangladesh is less. The objective of our study was to evaluate demographic and clinical profile within a defined period among COVID-19 Bangladeshi Patients in a Tertiary Care Private Medical College Hospital in Dhaka. **Method:** This observational study was conducted in the Department of Medicine, BAMCH for the period of four months (July 2020 to October 2020) following ethical approval. Total 100 Patients were diagnosed with COVID-19 cases either by real-time polymerase chain reaction (RT-PCR) positivity or by clinical features along with typical HRCT chest findings. Informed written consent was ensured before participation. Collected data were entered in pre-determined case record form (CRF) and subsequently analyzed by SPSS-20. **Result:** Among these 100 patients, the mean age was found to be 53 years. The highest percentage of patients (44%) belonged to 41-60 years of age. Regarding gender distribution, two-third of patients were male (70%) & one-third of patients were female (30%). The predominant symptoms of our enrolled patients were fever (88%), cough (80%), dyspnea (58%), and fatigue (48%). Around half of the patients had been suffering from Hypertension (54%) and Diabetes (47%). Almost half of our patients belonged to moderate severity (60%). The duration of hospital stay was from 1-36 days the mean was 7 days. There was a significant difference between severe and non-severe cases (p-value <.01). **Conclusion:** As this was early data, showing the epidemiological and clinical profiles of Bangladeshi COVID-19 patients hospitalized at a Private Hospital in Dhaka, the rate of RT-PCR positive cases were high without history of contact or exposure with infected person. The study reassured the vulnerability of elderly males in Bangladeshi population. Nationwide dissemination of study results including asymptomatic cases is crucial to limit the community transmission.

KEYWORDS: Coronavirus, COVID-19, clinical profile, demography, Bangladesh, pandemic.

INTRODUCTION

From late December 2019 till the end of August 2020, in these nine months, more than 23 million people are affected globally with more than eight hundred thousand deaths due to the COVID-19 pandemic.^[1] The whole world is fighting against this invisible enemy. People are trying hard to adapt to this new normal life. The global economy is facing a huge challenge. We still do not know when this devastating situation will come to an end; when we can breathe in the fresh air, without wearing masks. As this is a novel coronavirus, still

evolving, we are learning new information every day. Scientific research is going on throughout the world to know more about this virus so that we can combat it. Though severe acute respiratory illness with fever and respiratory symptoms comprise the main clinical presentations^[2], we must keep in mind the atypical presentations, so that no case will remain undiagnosed. Understanding regional features are always important. There are few published studies on COVID-19 patients from Government Hospitals. So, this descriptive study on 100 COVID-19 cases from the COVID dedicated unit of

a tertiary care Private Medical College Hospital was done to give a highlight on the epidemiological and clinical profile in our private hospital setting.

METHODOLOGY

The retrospective descriptive study on the epidemiological and clinical profile was done along with short-term treatment outcomes of COVID-19 patients from the COVID dedicated unit of Bashundhara Ad-Din Medical College Hospital (BAMCH) from July to October 2020 (4 months). The consecutive 100 patients from COVID dedicated isolation wards/ cabins of Bashundhara Ad-Din Medical College Hospital. Patients were selected and diagnosed with COVID-19 cases either by real-time polymerase chain reaction (RT-PCR) positivity or by clinical features along with a typical HRCT scan of chest findings. The patients who were critically ill and admitted directly to ICU were not included in our study. The study was approved by Institutional Ethical Committee and written informed

consent was obtained from patients involved before enrolment.

A team of doctors who had been treating these patients extracted the medical records from direct interviewing the patients/ attendants after taking the written informed consent and also from the hospital records. All the data were included in a previously pre-determined case record form (CRF), giving a particular ID number to each patient.

The data included contact history, demographic information, and clinical presentation including symptoms on admission and co-morbidities, laboratory investigation reports including chest imaging, treatment programs, and clinical outcomes along with the duration of hospital stay. The patients' severity was classified according to the clinical criteria of our national guideline (version 7.0).^[3]

Grading of Severity	Criteria
Mild	The clinical symptoms are mild, and there is no sign of pneumonia on imaging.
Moderate	Fever and respiratory symptoms with radiological findings of pneumonia. Respiratory distress with <30 breaths/min, Pulse asymmetry showing saturation>93% at ambient air.
Severe	Cases meeting any of the following criteria:- Respiratory distress (≥ 30 breaths/min);- Finger oxygen saturation $\leq 90\%$ at rest;- Arterial partial pressure of oxygen (PaO ₂)/ fraction of inspired oxygen (FiO ₂) ≤ 300 mmHg (ImmHg=0.133kPa)
Critical	Cases meeting any of the following criteria:- Respiratory failure and requiring mechanical ventilation-Shock- With other organ failure the requires ICA care.

Nasopharyngeal swab specimens from the upper respiratory tract that were obtained from all patients at admission and 2019-nCoV were confirmed by real-time RT-PCR. All patients were given chest x-rays on admission. HRCT scan of the chest was done in selected patients. Besides, a complete panel of routine laboratory tests, including complete blood count, blood biochemistry, CRP, D-dimer, ferritin, and pro-calcitonin was also done according to clinical requirements.

All procedures performed in studies involving human participants were by the ethical standards of the institutional (Bashundhara Ad-Din Medical College) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. For this type of study, formal consent was ensured. Ethical measures were taken throughout the study period to maintain a high standard of confidentiality and anonymity of the participants.

The research team analyzed the medical records of patients, obtained them with case record forms. The lead author reviewed the data. All of the data were then entered into a spreadsheet of the statistical software. Analysis was performed with statistical software, SPSS 20 (SPSS Inc., Chicago, IL, USA). Descriptive statistics were used during analysis, where continuous variables were expressed as the mean $\pm$ standard deviation and categorical variables were expressed as count

(percentage). To determine the association or difference independent samples t-test or Chi-square test were used. To assess the factors responsible for outcome both univariate and multivariate analyses were done accordingly. All results were done with 95% CI and $p < .05$ considered statistically significant

RESULTS

Total 100 COVID-19 patients (Both RT-PCR positive and negative) from COVID dedicated unit of Bashundhara Ad-Din Medical College Hospital (BAMCH) were enrolled in our study during a period of 6 months (July to October 2020), after BAMCH officially started treating COVID-19 patients among the Private hospitals in Dhaka. The age range of our patients was 12-86 years. The mean age was 53 years. The highest percentage of patients (44%) belonged to 41-60 years of age (Table-I). Regarding gender distribution, two-third of patients were male (70%) and one-third of patients were female (30%).

Table I: Distribution of patients according to age.

Age (years)	Frequency	Percentage
0-20	02	2%
21-40	22	22%
41-60	44	44%
61 and above	32	32%
Total	100	100%

Clinical characteristics: The common symptoms, fever (88%) with respiratory symptoms like cough (80%) and dyspnea (58%) topped the list, followed by fatigue (48%). Anosmia and altered taste sensation were 2

specific symptoms of COVID-19, which was present in 21% and 14% of patients respectively. Other than respiratory symptoms, patients also present with gastro-intestinal and neurological symptoms (Table-II).

Table II: Common symptoms of COVID-19 patients.

Symptoms	Present	Percentage	Absent	Percentage
Fever	88	88%	12	12%
Cough	80	80%	20	20%
Dyspnea	58	58%	41	41%
Fatigue	48	48%	50	50%
Anosmia	21	21%	79	79%
Altered Sense of taste	14	14%	86	86%
Sore Throat	31	31%	69	69%
Anorexia	20	20%	80	80%
Diarrhea	12	12%	88	88%
Headache	11	11%	89	89%
Vomiting	06	06%	94	94%
Chest Pain	04	04%	96	96%
Nasal Congestion	04	04%	96	96%
Confusion	02	02%	98	98%
Dizziness	02	02%	98	98%
Conjunctivitis	01	01%	99	99%

Comorbidities and risk factors: Almost half of the patients had been suffering from hypertension (54%) and Diabetes (47%), other less common associated co-

morbidities and among risk factors (19%) were smokers are shown in Table-III.

Table III: Comorbidities and risk factors.

Co-morbidities and risk factors	Present	Percentage	Absent	Percentage
Co-Morbidities	HTM	54	46	46%
	DM	47	53	53%
	Br. Asthma	14	86	86%
	CHD	06	94	94%
	CVD	04	96	96%
	COPD	01	99	99%
Risk factors	CKD	06	94	94%
	Smoking	19	81	81%
	Obesity	01	99	99%
	Chemotherapy	01	99	99%
	Sugery	01	99	99%

Contact History and RT-PCR test: Only one third patients (28%) could mention history of contact with COVID patients (Fig-1), which indicate community transmission. We did RT-PCR of nasopharyngeal swab of all patients, 64% (n-64) came positive.

Grading of Severity: Almost half of our patients belonged to moderate severity (60%), mild was 32%, severe 7% and critical only 01% respectively (Fig-2).

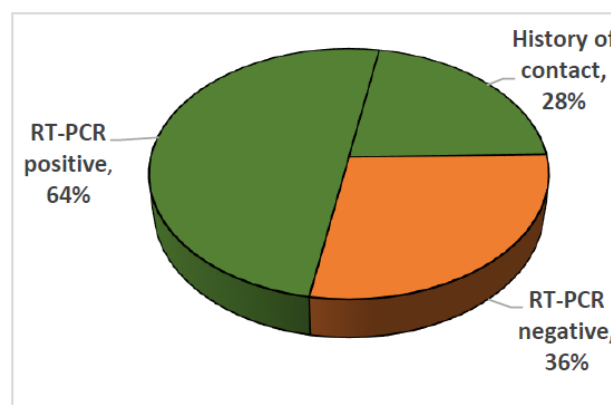


Figure 1: RT-PCR test and history of contact with COVID patients.

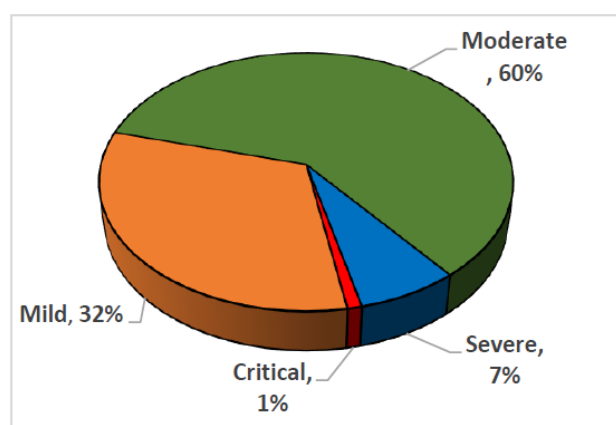


Figure 2: Distribution of patients according to severity.

Treatment outcome and hospital stay: Almost 79% patients were discharged with 08% referred for Intensive care and only two deaths (Table-IV). The duration of Hospital stay was from 1-36 days mean was 7 days.

Table IV: Treatment outcome.

Outcome	Total number	Percentage
Discharge with improvement	79	79%
Ongoing Treatment in Hospital	11	11%
Referred to ICU/HDU	08	08%
Death	02	02%
Total	100	100%

Association of severity: It was statistically analyzed and found that age and sex are not significantly different for severe and non-severe cases ($p > 0.05$). But duration of hospital stay is significantly different for severe and non-severe cases ($p < 0.05$). The severely sick patients required longer duration of hospitalization (Table-V).

Table V: Association of severity with age, duration of hospital stays and gender.

T-test of mean comparison	n	Mean Age	Range		p-value
			Lower	Upper	
Non-severe	78	52.29	49.75	54.83	0.3484
Severe	21	54.85	50.25	59.45	
T-test of mean comparison	N	Mean Hospital stay	Lower	Upper	p-value
Non-severe	78	6.37	5.70	7.05	0.018
Severe	21	8.41	6.25	10.57	
Chi Square test of association					
Gender		Non-severe	Severe	Total	
Female		28	6	66	
Male		50	15	123	
Total		78	21	189	
Pearson		Chi square (1)=0.7361		P value 0.391	

DISCUSSIONS

To our knowledge, this observational study report is the largest case study to date of COVID-19 patients in a Private Hospital of Dhaka recruiting 100 cases based on clinical context with typical chest imaging with or without RT-PCR positivity.

In our study population, the mean age was 53 years, which is quite similar to the findings of other studies as 55.5 years^[4], 51 years Chung et al^[5], 49 years Huang et al^[6], and 41.7 years.^[7] The presentation of COVID-19 is predominantly mild and asymptomatic in the age group <14. Perhaps the ACE2 receptor is not highly expressed in this age group.^[9]

A greater percentage of males (70%) than females (30%) affected with COVID-19 was observed. Similar male preponderance was found in other studies, (73%) of the first reported study of China^[4] or 63% of a study in Bangladesh.^[7,8] It has been found that more males were infected by SARS-CoV.^[10,11] Current research suggests that ACE2 is the receptor for COVID-19^[12], and its expression in men is higher than that in women^[13], which

may be the reason for the higher proportion of men with severe illness. The reduced susceptibility of females to viral infections could also be due to the protection from X chromosome and sex hormones.^[14]

The symptomatology of COVID-19 was extensively discussed in WHO-China joint report on COVID-19 (n=55,924).^[15] Predominant symptoms are pyrexia (85%), cough (67.7%), productive sputum (33.4%), and dyspnea (18.6%).^[16,17,18] This symptomatology is quite similar to the present study: fever (88%), cough with or without sputum production (80%), although our patients suffered from more dyspnea (58%). Studies from Europe first urged the international scientific community that sudden anosmia or ageusia need to be recognized as important symptoms of the COVID-19 infection.^[17] In this study, anosmia and altered taste sensation was present in 21% and 14% of patients respectively. Different from SARS-CoV and MERS-CoV infections, is that very few COVID-19 patients show prominent upper respiratory tract signs and symptoms such as rhinorrhea or sneezing suggesting that the virus might have a greater preference for infecting the lower respiratory tract.^[4] Only 4% of the

study population had nasal congestion. About half of patients infected by COVID-19 had chronic underlying diseases, mainly cardiovascular and cerebrovascular diseases and diabetes, this is similar to the present study as hypertension (54%) and diabetes (47%).^[17]

Notably, only 28% of patients could mention the history of contact with COVID patients, which indicates there is community transmission and transmission from asymptomatic carriers. RT-PCR was positive in 64% of patients. A systematic review of the accuracy of covid-19 tests reported false-negative rates of between 2% and 29% (equating to the sensitivity of 71-98%), based on negative RT-PCR tests which were positive on repeat testing.^[19] That is why, for the diagnosis of COVID-19, besides the RT-PCR test, emphasis on the clinical background, chest imaging findings, and other laboratory markers were also given emphasis.

Mild symptomatic patients usually do not require hospitalization; they can be treated at home with isolation. Critical patients from ICU/ HDU were not included. That is why the majority of patients belonged to a moderate (60%) grade of severity.

Median hospital stay ranged from 4 to 53 days within China, and 4 to 21 days outside of China, across 45 studies.^[20] This is similar to the present study, the duration of hospital stay was from 01-36 days, mean was 7 days. There was a significant difference between severe and non-severe cases (p-value 0.01). Severely sick patients required a longer duration of hospitalization.

CONCLUSION

This is early data, showing the epidemiological and clinical profiles of Bangladeshi COVID-19 patients hospitalized at a Private Hospital in Dhaka. There were some limitations to mention as the study was done in a single-center within a very short time on a limited number of samples. Asymptomatic patients, patients with mild symptoms at home, and severe cases in ICU could not be included in this study. The outcome of the study needs to be further verified by a larger sample with a multicenter study with extended follow-up. However, the study reassured the vulnerability of elderly males in Bangladeshi population. Nationwide dissemination of study results including asymptomatic cases is crucial to limit the community transmission. We must emphasize early diagnosis, early isolation, and early management of all COVID-19 patients to reduce transmission and mortality, thus saving mankind from this invisible enemy.

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