



Clinical Characteristics of the Patients with Corona Virus Disease 2019 in Sylhet District of Bangladesh

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Abstract

Background: Bangladesh has suffered a lot corona virus disease 2019 (COVID 19), but clinical data on COVID 19 is fewer still. **Objective:** The purpose of the present study was to determine the patterns of clinical characteristics of confirmed COVID 19 patients in Sylhet to contribute as information resource of our country. **Methodology:** This cross sectional study was conducted in the inpatient Department of Medicine of Jalalabad Ragib-Rabeya Medical College Hospital, Sylhet, Bangladesh to evaluate the clinical characteristics among the COVID 19 patients from July 2020 to December 2020 by purposive sampling technique. For the purpose a total 75 RT PCR positive COVID 19 patients were included in the study and data were collected with a semi-structured questionnaire. **Results:** The results showed that, 85.3% patients presented with fever, 46.7% with cough and 38.7.0% with dyspnoea. On examination 85.3% had fever, 38.7% had tachypnea, 38.7% had low SpO₂ at room temperature, 57.3% had vesicular breath sound. Lab investigations (biochemical) mostly needed at admission for management of the patients were complete blood count (CBC) in 93.3% case, c reactive protein (CRP) in 76.0% case, D-dimer in 68.0% case, random blood sugar (RBS) in 56.0% case, serum creatinine in 54.7%, serum ferritin in 42.7%, serum electrolytes in 42.7%, electro cardiogram (ECG) in 38.7%. According to clinical classification for case management of COVID 19 58.7%, 21.3%, 16%, 2.7%, 1.3% were successively diagnosed as mild, moderate, severe, asymptomatic and critical COVID 19 infection. Among the study population 80.0% patient was in need of antibiotic, 60.0% anti coagulant, 48.0% steroid, 38.7% oxygen, 2.7% antiviral drugs, 1.3% mechanical ventilation during their treatment. **Conclusion:** The results obtained from this study could urge more study on it to provide updated knowledge as well as find potential treatment strategies for this pandemic disease. [*Bangladesh Journal of Infectious Diseases, June 2024;11(1):45-51*]

Keywords: Corona virus disease 2019 (COVID 19), Reverse transcriptase polymerase chain reaction (RT PCR), Percent saturation of oxygen in the blood (SpO₂)

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Introduction

Since December 8, 2019, several cases of pneumonia of unknown etiology have been reported in Wuhan, Hubei province, China. On Jan 7, a novel corona virus was identified by the Chinese Center for Disease Control and Prevention (CDC) from the throat swab sample of a patient, and was subsequently named 2019-nCoV by WHO^{1,2,3,4}. The official names of corona virus disease 2019 (COVID-19) and severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) were issued by the WHO on 11 February 2020⁵. In terms of genetic characteristics, its causal agent, SARS-CoV-2, is significantly diverse from SARS-CoV and Middle East respiratory syndrome (MERS) -CoV⁶ and also the disease caused by the SARS-CoV-2 manifests with diverse clinical characteristics ranging from asymptomatic patients to acute pneumonia with multiorgan failure⁷.

The virus was confirmed to have spread to Bangladesh in March 2020. The first three known cases were reported on 8 March 2020 by Institute of Epidemiology, Disease Control and Research (IEDCR). Since then, the pandemic has increased day by day over the whole nation and the number of affected people has been rising. Bangladesh is the second most affected country in South Asia, after India⁸. Infections remained low until the end of March but saw a steep rise in April⁹. In the week ending on 11 April, new cases in Bangladesh grew by 1,155 percent, the highest in Asia, ahead of Indonesia, with 186 percent¹⁰.

The pandemic still rages in large parts of the world and it is the scenario that we have feared for decades. 2020 saw the world unite against the virus, from small personal gestures to protect others, to international collaboration on research and innovation. Few studies were now available in Bangladesh on COVID 19. The present study uses a comprehensive approach to determine the patterns of clinical characteristics of confirmed COVID 19 patients in Sylhet to contribute as information resource of our country.

Methodology

Study Design and Population: This cross sectional study was carried out in the inpatient department of Medicine of Jalalabad Ragib-Rabeya Medical College Hospital (JRRMCH), Sylhet from July 2020 to December 2020 by purposive sampling technique. For the purpose a total 75 RT PCR positive COVID 19 patients were included in the

study and data were collected with a semi-structured questionnaire.

Study Procedure: All patients admitted during the same time-period and individuals tested positive for SARS-CoV-2 RNA in nasopharyngeal swab specimens via polymerized chain reaction (PCR) tests were included. Those who were not interested in participation or did not give consent to data collection and usage for research purposes were excluded. All the ethical issues were maintained properly.

Statistical Analysis: Statistical analysis was performed by Windows based software named as Statistical Package for Social Science (SPSS), versions 22.0 (IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.). Continuous data were expressed as mean, standard deviation, minimum and maximum. Categorical data were summarized in terms of frequency counts and percentages. Every effort was made to obtain missing data.

Ethical Clearance: All procedures of the present study were carried out in accordance with the principles for human investigations (i.e., Helsinki Declaration 2013) and also with the ethical guidelines of the Institutional research ethics. Formal ethics approval was granted by the local ethics committee. Participants in the study were informed about the procedure and purpose of the study and confidentiality of information provided. All participants consented willingly to be a part of the study during the data collection periods. All data were collected anonymously and were analyzed using the coding system.

Results

The results showed that, among the patients, the most common symptom was fever (85.3%) followed by cough (46.7%), dyspnoea (38.7%), sore throat (26.7%), anorexia (20.0%), vomiting (12.0%), nasal congestion (10.7%), headache (10.7%), diarrhea (8.0%), fatigue (6.7%), chest pain (6.7%), conjunctivitis (6.7%) confusion (6.7%), altered sense of smell (2.7%) and asymptomatic (2.7%) (Table 1).

Table 1: Distribution of Patients According to Symptoms (n=75)

Symptoms	Frequency	Percent
Fever	57	76.0
Cough	35	46.7

Symptoms	Frequency	Percent
Dyspnoea	29	38.7
Sore throat	20	26.7
Anorexia	15	20.0
Vomiting	9	12.0
Nasal Congestion	8	10.7
Headache	8	10.7
Diarrhoea	6	8.0
Fatigue	5	6.7
Chest pain	5	6.7
Conjunctivitis	5	6.7
Confusion	5	6.7
Altered sense of smell	2	2.7
Asymptomatic	2	2.7

*More than one presentation was considered in one respondent.

On examinations 85.3% were febrile, 10.7% had tachycardia, 18.7% were hypertensive, 38.7% had tacypnea, 38.7% had low SpO2 at room temperature, 2.7% had cyanosis, 57.3% had vesicular breath sound, 20.0% had bronchial breath sound, 22.7% had vesicular breath sound with prolonged expiration, crackles were present in 41.3% and wheeze was in 21.3% patients during admission (Table 2).

Table 2: Signs of Patients at Admission (n=75)

Signs	Frequency	Percent
Temperature		
• Fever (>100.40F)	64	85.3
• Normal	11	14.7
Pulse Rate		
• Normal	66	88.0
• Tachycardia	8	10.7
• Bradycardia	1	1.3
Blood Pressure		
• Normal	56	74.7
• Hypertension	14	18.7
• Hypotension	5	6.6
Respiratory Rate		
• Normal (12-20 Breaths per minute)	46	61.3
• Tachypnoea	29	38.7
Cyanosis		
• No	73	97.3
• Yes	2	2.7
SPO₂ at Room Temperature		
• ≥95 %	45	60.0
• 90 to 94 %	17	22.7

Signs	Frequency	Percent
• 85 to 89 %	4	5.3
• 80 to 84 %	4	5.3
• 75 to 79 %	3	4.0
• ≤74 %	2	2.7
Breath Sound		
• Vesicular	43	57.3
• Bronchial	15	20.0
• Vesicular breath sound with prolonged expiration	17	22.7
Added Sound		
• Crackles	30	40.0
• wheeze	16	22.7
• No	28	37.3

Hypertension= Systolic BP >140mm of Hg & Diastolic BP>90mm of Hg; Hypotension=BP< 90/60mm of Hg; Normal (60-100 beats/min); Tachycardia=>100 bpm; Bradycardia=<60 bpm

On chest X-Ray posterior anterior view (CXR P/A view) report, 41.3% reports were normal, 16.0% has unilateral consolidation and 42.7% has bilateral hazy opacities, rounded in morphology, with peripheral and lower lung distribution (Table 3).

Table 3: Chest X Ray Reports of Study People (n=75)

Pneumonitis	Frequency	Percent
Present		
• Unilateral Consolidation	12	16.0
• Bilateral Hazy Opacities	32	42.7
Absent	31	41.3
Total	75	100.0

Bilateral Hazy Opacities=rounded in morphology with peripheral and lower lung distribution

Laboratory investigations (biochemical) needed at admission for management of the patients were CBC in 93.3% case, CRP in 76.0% case, D-dimer in 68.0% case, RBS in 56.0% case, serum creatinine in 54.7%, serum ferritin in 42.7%, serum electrolytes in 42.7%, ECG in 38.7%, HbA1C in 18.7%, CT scan of chest in 6.7%, serum ALT in 6.7%, troponin I in 6.7%, blood for culture sensitivity in 2.7%, arterial blood gas (ABG) in 2.7% and procalcitonin in 1.3% (Table 4).

Table 4: Patients Lab Investigations Needed at Admission (n=75)

Investigations	Frequency	Percent
CBC	70	93.3
CRP titre	57	76.0
D-dimer	51	68.0
RBS	42	56.0
Serum Creatinine	41	54.7
Serum ferritin	32	42.7
Serum electrolytes	32	42.7
ECG	29	38.7
HbA1C	14	18.7
CT scan of chest	5	6.7
Serum ALT	5	6.7
Troponin I	5	6.7
Blood for C/S	2	2.7
ABG	2	2.7
Procalcitonin	1	1.3

*More than one presentation was considered in one respondent.

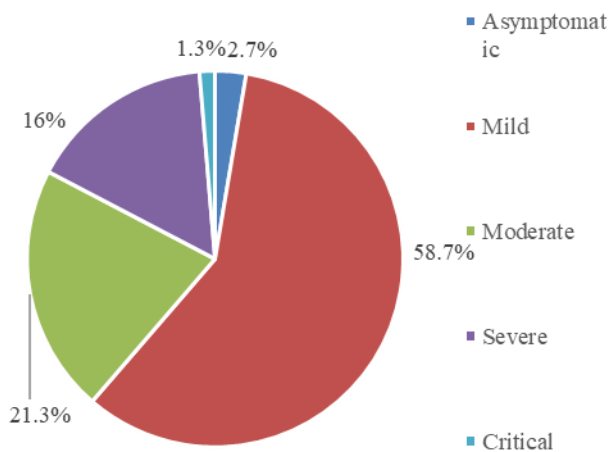


Figure 1: Patients according to clinical classification for case management of COVID 19 (n=75)

According to clinical classification for case management of COVID 19, 58.7%, 21.3%, 16%, 2.7%, 1.3% was successively diagnosed as mild, moderate, severe, asymptomatic and critical COVID 19 infection (Figure 1). In this study we found 78.67% patients had co-morbidities (Table 5).

Table 5: Distribution of Patients with or Without Co-Morbidities (n=75)

Co-morbidities	Frequency	Percent
With	59	78.67
Without	16	21.33

Among the co-morbidities 54.7% had diabetes mellitus (DM), 49.3% had hypertension (HTN), 33.3% had history of smoking, 20.0% had malnutrition, 14.7% had chronic obstructive pulmonary disease (COPD), 13.3% had obesity, 12.0% had chronic heart disease, 5.3% had asthma and stroke, 4.0% had pulmonary tuberculosis (PTB), 2.7% had chronic kidney disease (CKD), urinary tract infection (UTI) and thyroid disease as well as 1.3% had dementia (Table 6).

Table 6: Distribution of Patients Having Co-Morbidities (n=75)

Co-morbidities	Frequency	Percent
DM	41	54.7
HTN	37	49.3
Smoking	25	33.3
Malnutrition	15	20.0
COPD	11	14.7
Obesity	10	13.3
Chronic heart disease	9	12.0
Asthma	4	5.3
Stroke	4	5.3
PTB	3	4.0
CKD	2	2.7
UTI	2	2.7
Thyroid disease	2	2.7
ILD	1	1.3
Dementia	1	1.3

*More than one presentation was considered in one respondent.

We also found, 80.0% patient needed antibiotic, 60.0% needed anti coagulant, 48.0% needed steroid, 38.7% needed oxygen, 2.7% needed antiviral drugs and 1.3% needed mechanical ventilation during their treatment (Table 7).

Table 7: Treatment Given to Patients (n=75)

Treatment	Frequency	Percent
Antibiotic	50	66.6
Anticoagulant	45	60.0
Steroid	36	48.0
Oxygen therapy	29	38.7
Anti-viral drug	2	2.7
Mechanical Ventilation	1	1.3

*More than one presentation was considered in one respondent.

Discussion

The current study showed that, among the study populations 85.3% patient has presented with fever, 46.7% with cough, 38.7% with dyspnoea, 26.7% with sore throat and 20.0% with anorexia. Jahan et

al. also found the most commonly observed symptoms were fever (70%) followed by cough (55%), breathlessness (42%), dysgeusia (38%), anosmia (25%)¹⁶. So the most prevalent symptoms we could say were fever, cough and breathing difficulty. On examination 85.3% had fever, 10.7% had tachycardia, 1.3% had bradycardia, 18.7% had hypertension, 6.6% had hypotension, 38.7% had tachypnea, 38.7% had low SpO₂ at room temperature, 2.7% had cyanosis, 57.3% had vesicular breath sound, 20.0% had bronchial breath sound, 22.7% had vesicular breath sound with prolonged expiration, crackles in 41.3% and wheeze in 21.3% during admission.

Study by Mannan et al¹⁷ found among the symptomatic cases, a total of 52% patients experienced a body temperature exceeding 38.3°C, where 40.75% patients body temperature ranged from 37.2°C to 38.3°C. The oxygen saturation rate went below 90% for 19.6% of the patients, and another 8% of patients experienced a low saturation level of 90% to 92.9%. The systolic and diastolic blood pressure measures were found to be greater than 159 mm of Hg and 99 mm of Hg, respectively, for 5% of the symptomatic cases¹⁷. So two important characteristics features moderate to severe and critical cases were fever and gradual fall of oxygen saturation.

In this study, 41.3% patients' CXR (P/A view) reports were normal, 16.0% had consolidation and 42.7% had bilateral patchy opacity. Another study in abroad found in abnormal CXR, consolidation opacities were the most common finding seen in 81.3%, followed by reticular interstitial thickening were seen in 39.9% and ground glass opacity were seen 32.5% of patients. Most of the patients showed bilateral lung affection (181 patients, 67.5%) with peripheral distribution (156 patients, 58.2%) and lower zone affection (196 patients, 73.1%)¹⁸. So here we could say that, plain radiography was essential and accurate for COVID 19 disease assessment.

Laboratory investigations needed at admission for management of our patients were CBC in 93.3% case, CRP in 76.0% case, D-dimer in 68.0% case, RBS in 56.0% case, Serum Creatinine in 54.7%, Serum ferritin in 42.7%, Serum electrolytes in 42.7%, ECG in 38.7%, HbA1C in 18.7%, CT scan of chest in 6.7%, Serum ALT in 6.7%, Troponin I in 6.7%, Blood for C/S in 2.7%, ABG in 2.7% and Procalcitonin in 1.3%. Another study by Mannan et al. also carried out near to similar investigations for case management and they found a substantial number of participants in this study, biochemical

assay results were found to deviate from the normal range for each of the markers measured in the analyte¹⁷.

In this study according to clinical classification associated with COVID 19 disease 58.7%, 21.3%, 16%, 2.7%, 1.3% was successively diagnosed as mild, moderate, severe, asymptomatic and critical COVID 19 infection. A study in China found among total of 663 COVID-19 patients 0.5% of the patients were diagnosed with mild COVID-19, while 37.8%, 47.5% and 14.2% were in moderate, severe, and critical conditions, respectively¹⁹. So severity of cases varies from country to country. In this study we found 78.67% patient had comorbidities. A study by Jahan et al. found among 300 patients, 102 (34%) patients had comorbidities¹⁶.

In this study among the co morbidities 54.7% had DM, 49.3% had HTN, 33.3% had history of smoking, 20.0% had malnutrition, 14.7% had COPD, 13.3% had obesity, 12.0% had chronic heart disease, 5.3% had asthma and stroke, 4.0% had PTB, 2.7% had CKD, UTI and thyroid disease, 1.3% had dementia. A study by Mannan et al¹⁷ found DM was the most prevalent co-morbid condition (19.3%), followed by respiratory (8.4%) and cardiovascular (7.7%) diseases among the study participants. So we could summarize that, comorbid conditions increased the risk of having COVID 19 infection. Here we found, 80.0% patients' antibiotic, 60.0% got anti coagulant, 48.0% got steroid, 38.7% got oxygen, 2.7% got antiviral drugs and 1.3% got mechanical ventilation during their treatment. In Bangladesh another study found that, patients were most commonly treated by antibiotic (95.09%), followed in second by corticosteroid (46.01%). Anti-viral drugs and oxygenation were also needed for other patients²⁰. The use of antibiotics had to be planned, well categorized not randomly both the study again reminds us.

Conclusion

As epidemiologic characteristics of this new disease are unknown, rapid investigation and determination of epidemiologic characteristics of new infectious diseases is crucial for limiting transmission and for attaining desirable treatment outcomes through early diagnosis and management. Sharing of crucial data could help to definitively determine characteristics of this new infectious disease. Clinically, antibiotics were the most widely used treatment. However, the majority of the patients were discharged without

complications. The current investigation would be helpful to understand the clinical manifestations during the next wave of the COVID-19 pandemic in Bangladesh.

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None

Conflict of Interest

The authors have no relevant conflicts of interest to declare.

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Contribution to authors:

Begum M, Deb BR: Conception and design, or design of the research; Das S, Chowdhury F: the acquisition, analysis, or interpretation of data; conceptualized and designed the overall study; Begum M: involved in data collection; Moureen A: Drafting the manuscript or revising it critically for important intellectual content; Ahmed S, Hamid N: involved in data input and data cleaning. Begum M, Deb BR: conducted data analysis; Chowdhury F, Ahmed S: drafted the manuscript. All authors reviewed and approved the final manuscript.

Data Availability

Any questions regarding the availability of the study's supporting data should be addressed to the corresponding author, who can provide it upon justifiable request.

Ethics Approval and Consent to Participate

The Institutional Review Board granted the study ethical approval. Since this was a prospective study, every study participant provided formal informed consent. Each method followed the appropriate rules and regulations.

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