Original Research Article

Major Symptoms and Outcome of Covid-19 Positive Patients: A Study in a Tertiary Care Hospital in Bangladesh

ABSTRACT

Background:*AnoutbreakofCovid-19 causedbytheSARS-Cov-2 (severe acute respiratory syndrome coronavirus 2) initially emerged in Wuhan, China since December 2019 and now has spread worldwide.The first Covid-19 patient was detected on 8 March 2020in Bangladesh.This disease was changing its own nature and dimension and forming newer hotspots around the globe day by day. The pre conception about the major symptoms and outcome of Covid-19 positive patients may be helpful for the healthcare professionals in the management of Covid-19 patients.The aim of this study was to evaluatemajor symptoms and outcome of covid-19 positive patients.****Methods:*** *This prospective observational study was conducted in the Department of Medicine, Rajshahi Medical College Hospital, Rajshahi, Bangladesh from January 2021 to December 2021. In total 67 confirmed Covid-19 cases by RT-PCR tests attended the mentioned hospital with were enrolled in this study as study population. Before starting data collection, proper written consents were taken from all the patients. For data collection,a pre-designed questionnaire was used. Along with demographic and clinical features data regarding in-hospital mortality, intensive care unit (ICU) admission, use of invasive mechanical ventilation, total hospital length of stay, complications, and treatment patterns were recorded. Collected data were processed, analyzed and disseminated by using MS Excel and SPSS version 23.0 program as per necessity.****Results:****In analyzing the major clinical symptoms of the patients, we observed that, the highest number of patients were with cough which was found among 49% cases. Besides this, shortness of breath, hypoxemia/oxygen use, lower limb swelling and bleeding were found among 39%, 27%, 12% and the rest 7% patients respectively. The highest number of patients were with HTN as comorbidity which was found in 15% cases. Besides this, DM, CKD, CRD, cancer/immunodeficiency and cardiac diseases were found among 12, 10%, 7%, 4% and the rest 1% patients respectively. As final outcome, cure rate was found as 97% and death was occurred in only 3% (n=2) cases. We observed, 10% patients did not stay at hospital even for a single day. For only 7% patients, ventilation facilities were in needed and the average ventilation time of them was 13.5 days.****Conclusion:*** *Cough and shortness of breath are two major symptoms for Covid-19 patients. Proper ventilation, ICU facilities can decrease the sufferings, mortality as well as morbidities of Covid-19 patients.*

Keywords: *Covid-19 positive, SARS-Cov-2, Symptoms, Outcome, RT-PCR, Comorbidity.*

1. INTRODUCTION

Now a day, the name of 'Covid-19' is treated as a threat. In Bangladesh,for the first time, Covid-19 cases were detected in Dhaka on the 8thMarch of 2020. Till then the number of deaths caused by Covid-19 is being increasing. Covid-19 which is also called as novel coronavirus disease is by far the most concerning outbreak of atypical pneumonia since the far less detrimental 2003 outbreak of severe acute respiratory syndrome (SARS)[1]. Once upon a time,by the World Health Organization (WHO), Covid19 pandemic has been declared an international public health emergency [2]. By1stJuly of the year of 2020, the Covid-19 pandemic has infected over 10 million people across the world, causing more than 5,00,000 deaths [3].The unpredictable nature of this situation as well as the uncertainty regarding Covid-19 can often trigger psychological distress and mental illness, including depression, anxiety, and traumatic stress [4]. The World Health Organization (WHO) showed that, 75% of 122 surveyed countries experienced disruption in NCD services during the pandemic of Covid-19 [5]. The increased fear of Covid 19 or being diagnosed with Covid-19 disease has significantly affected people's medical-seeking behavior and anxiety. Such attitudes were noted particularly in slums and in communities of low socio-economic status in Bangladesh, Nigeria, Kenya and Pakistan [6]. In several countries,excess mortality during the pandemic of Covid 19 have been premeditated by many authors. Wu et al. [7]found 35% excess deaths in the United Kingdom. In addition, excess mortality was seven-fold higher than baseline in New York City, USA at the peak of the pandemic [8] reported 20% excess mortality in all US cities. The objective of this study was to evaluate major symptoms and outcome of covid-19 positive patients. in Bangladesh.

2. METHODOLOGY

This was a prospective observational cohort study that was conducted in the Department of Medicine, Rajshahi Medical College, Rajshahi, Bangladesh during the period from January 2021 to December 2021. In total 67 confirmed Covid-19 cases by RT-PCR (A real-time reverse transcription polymerase chain reaction) tests attended the mentioned hospital and were enrolled in this study as study subjects. Simple random sampling technic was used in sample selection. Before data collection, proper written consents were taken from all the patients. In accordance with the principles of human research specified in the Helsinki Declaration [9] and executed in compliance with currently applicable regulations and the provisions of the General Data Protection Regulation (GDPR), the whole intervention was conducted [10]. According to the inclusion criteria of this prospective study, both male and female patients of several ages and professions attended the mentioned hospital were included as the study population. Because of our limitations in managing study samples, logistic supports and manpower we were bound to conduct this study on only 67 patients though, sapling rules demanded more.

On the other hand, according to the exclusion criteria of this study, severely ill patients, cases of surgery, very aged geriatric patients and ICU patients for a long time were excluded. Participants' opinions as well as diagnostic reports along with RT-PCR test reports were the basic source of information in this study. For data collection, a predesigned questionnaire was used.Data regarding the age, gender, BMI (Defined by WHO), symptoms, comorbidities and outcomes of the participants were recorded. Collected all data were processed and analyzed by using the MS Excel program. Data were disseminated in numbers and/or in percentages.

3. RESULT

In this study, among total 67patients, 70% were male whereas the rest 30% were female. So,the male-female ratio of the participants was 2.33:1.The highest number of patientsin this study were from the 51-60 years' age group which was 27%. Then 3%, 21%, 16%, 12% and the rest 21% patients were from 21-30, 31-40, 41-50, 61-70 and > 70 years' age groups respectively. According to the BMI status of the patients, we observed that the majority portion patients were with normal body-weight (BMI:18.5-24.9 Kg/m^2) which was 54% and the rest 46% were with overweight status.In this study, in analyzing the clinical symptoms of the patients, we observed that the highest number of patients were withcough which was found among 49% of cases. Besides this, shortness of breath, hypoxemia/oxygen use, lower limb swelling and bleeding were found among 39%, 27%, 12% and the rest 7% patients respectively. In assessing the comorbidities among the patients, we observed that the highest number of patients were with HTN which was found in 15% of cases. Besides this, DM, CKD, CRD, cancer/immunodeficiency and cardiac diseases were found among 12, 10%, 7%, 4% and the rest 1% patients respectively. In this study, among all the Covid-19 patients, as final outcome, cure rate was found as 97% and death was occurred in only 3% (n=2) cases. As per the report of hospital staying of the patients we found, 10% patients did not stay at hospital even for a single day. For only 7% Covid-19 patients, ventilation facilities were in needed and the average ventilation time of them (n=5) was 13.5 days.

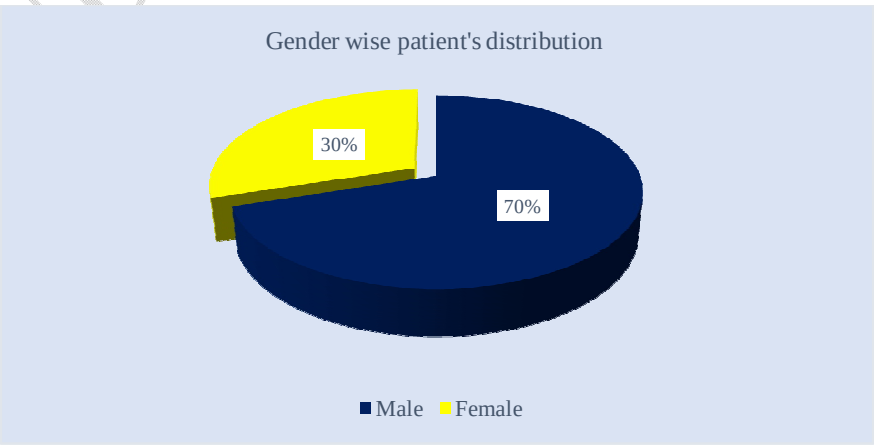

Figure 1:Pie chart showed gender distribution of patients (N=67)

Table 1: Distribution of the study patients by age (N=67)

Age (Years)	n	%
21 - 30 yrs.	2	3.0%
31 - 40 yrs.	14	21.0%
41 - 50 yrs.	11	16.0%
51 - 60 yrs.	18	27.0%
61 - 70 yrs.	8	12.0%
>70 yrs.	14	21.0%

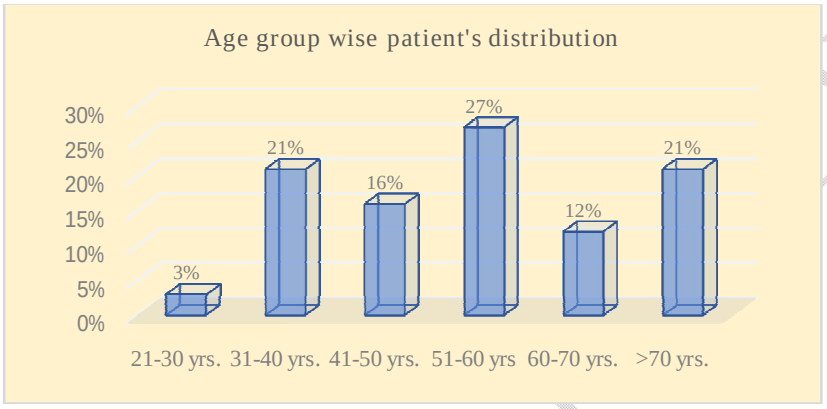

Figure 2:Bar chart showed gender distribution of patients (N=67)

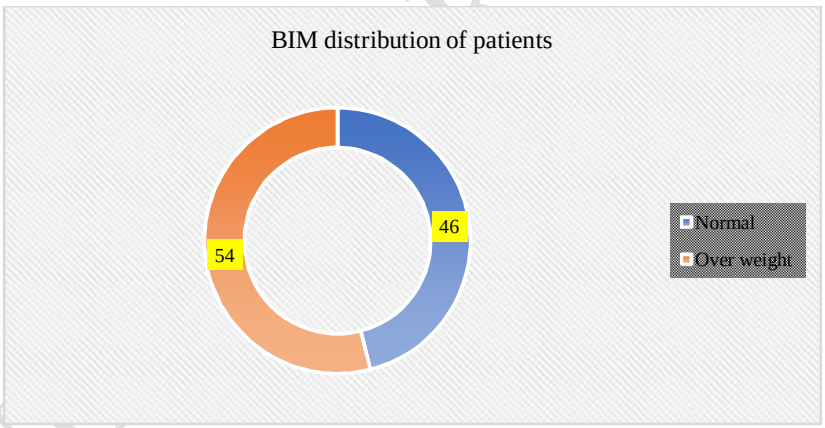

Figure 3:Ring chart showed BMI distribution of patients (N=67)

Table 2: Distribution of major symptoms amongpatients (N=67)

Major symptoms	n	%
Cough	33	49%
Shortness of breath	26	39%
Hypoxemia/Oxygen use	18	27%
Lower limb swelling	8	12%
Bleeding	5	7%

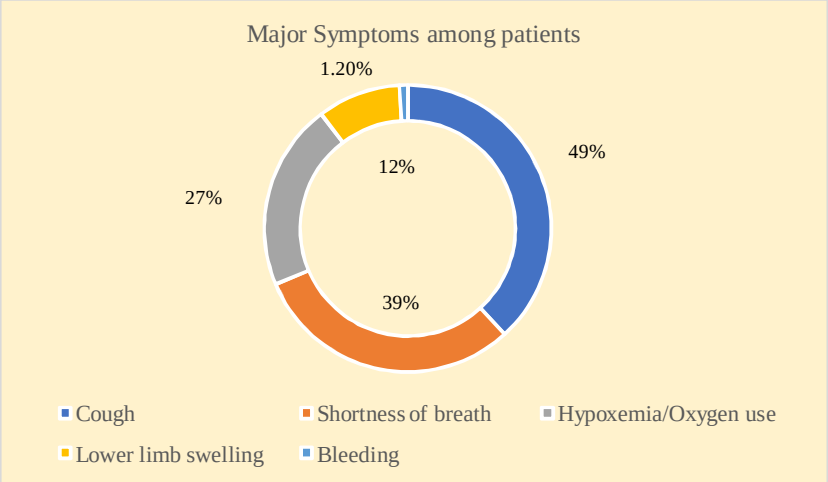

Figure 4:Ring chart showed BMI distribution of patients (N=67)

Table 3: Distribution of comorbidities amongpatients (N=67)

Characteristic	n	%
Hypertension	10	15%
Diabetes Mellitus	8	12%
Chronic kidney disease	7	10%
Chronic respiratory diseases	5	7%
Cancer/Immunodeficiency	3	4%
Cardiac diseases	1	1%

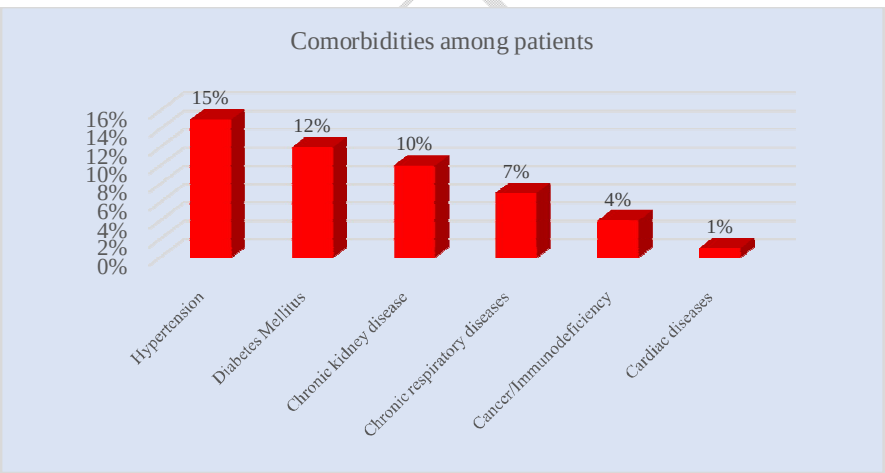

Figure 5: BMI distribution of patients (N=67)

Table 4: Distribution of final outcomesamong patients (N=67)

Characteristics	n	%
Survival		
Cured	65	97%
Death	2	3%
Hospital staying (Day)		
Not stayed	7	10%
Stayed for <3 days	17	25%
Stayed for 3-7 days	22	33%

Stayed for 8-14 days	13	19%
Stayed for>14 days	8	12%
Ventilation		
Needed ventilation	5	7%
Average ventilation time in day (n=5)	13.5	

4. DISCUSSION

This study aimed to evaluate major symptoms and outcomes of covid-19 positive patients. In this study, among total 67 patients, 70% were male whereas the rest 30% were female. So, the male-female ratio of the participants was 2.33:1. These findings was very similar to the findings of a study [11] conducted in China.The highest number of patients of this study were from 51-60 years' age group which was 27%. Then 3%, 21%, 16%, 12% and the rest 21% patients were from 21-30, 31-40, 41-50, 61-70 and > 70 years' age groups respectively; these findings are comparable with astudy [12] conducted in Bangladesh. According to the BMI status of the patients, we observed that, majority portion patients were with normal body-weight (BMI: 18.5-24.9 Kg/m^2) which was in 54% and the rest 46% were with overweight (BMI: 25.0 to <30 Kg/m^2) status.In this study, in analyzing the clinical symptoms of the patients, we observed that the highest number of patients were with cough which was found among 49% of cases. Besides this, shortness of breath, hypoxemia/oxygen use, lower limb swelling and bleeding were found among 39%, 27%, 12% and the rest 7% patients respectively. Al these symptoms were described in another study as major [13]. In assessing the comorbidities among the patients, we observed that, the highest number of patients were with HTN which was found in 15% cases. Besides this, DM, CKD, CRD, cancer/immunodeficiency and cardiac diseases were found among 12, 10%, 7%, 4% and the rest 1% patients respectively. All these findings regarding comorbidities were near about similar with the findings of another study [14]In this study, among all the Covid- 19 patients, as final outcome, cure rate was found as 97% and death was occurred in only 3% (n=2) cases. But a lower survival rate was found in those aged 75 years, which was described as a factor that increased the risk of death [15]. Some studies had also shown that, the survival rate decreases in cases aged >60 years, and those with cerebrovascular disease, hematologic disease, diabetes, neurological disease, kidney disease, etc. [16].As per the report of hospital staying of the patients we found, 10% patients did not stay at hospital even for a single day. In this current intervention, for only 7% Covid-19 patients, ventilation facilities were in needed and the average ventilation time of them (n=5) was 13.5 days.

Limitation of the study:

It was a single-centeredobservational cohort study with a small sized sample. So,the findings of this study may not reflect the exact scenario of the whole country.

5. CONCLUSION & RECOMMENDATION

Cough and shortness of breath are two major symptoms for Covid-19 patients. Proper ventilation and ICU facilities can decrease the suffering, mortality as well as morbidities of Covid-19 patients. Special care is in needed for aged patients and cases with one or more comorbidities. For getting more specific results, we would like to recommend conducting similar studies in several places with larger-sized samples.

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