

Original Research Article

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

ABSTRACT

Background: An outbreak of Covid-19 caused by the SARS-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 2020 in 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. **Aim of the study:** The aim of this study was to evaluate major 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 during the period 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 in patient. 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 8th March 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), Covid-19 pandemic has been declared an international public health emergency [2]. By 1st July 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 major objective of this study was to evaluate major symptoms and outcome of covid-19 positive patients in Bangladesh.

2. METHODOLOGY

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This was a prospective **observational** study which 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 tests attended the mentioned hospital with were enrolled in this study as study subjects. 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. 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 long time were excluded. Participant's 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. Collected all data were processed, analyzed and disseminated by using MS Excel and SPSS version 23.0 program as per necessity.

Comment [f5]: This was a prospective observational cohort study design....

Comment [f6]: Hospitalized patients? Details are necessary. How 67 participants were recruited? At random? Describe with details.

3. RESULT

In this study, among total 67 patients, 70% were male whereas the rest 30% were female. So male patients were dominating in number and the male-female ratio was 2.33:1. 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. According to the BMI status of the patients, we observed that, majority portion patients were with normal body-weight (BMI:18.5-24.9) which was in 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 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. 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. 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 was 13.5 days.

Comment [f7]: How the data was analyzed? How the variables were categorized? (Reference or Risk)? What the Method used to data analysis? or the Statistics test used to evaluate the relationships between variables? It can be given by authors with details.... Explain to readers what was the criterias to choose outcomes in this study? it is mandatory explain to everybody. Which data were collected? (Example weight, height, age, sex, marital status, Social and Economic Status, etc) How did you found BMI? Used the Reference WHO? CDC? NHI? etc

Comment [f8]: It will be better if you present as Table 1 Social and Demographic Characteristics of the participants.

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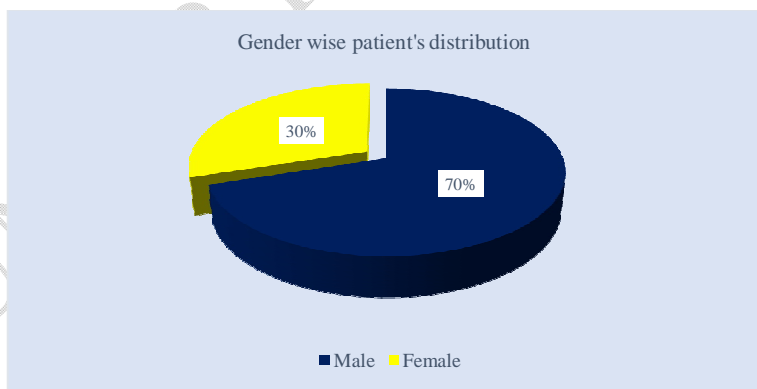


Figure 1: Pie chart showed gender distribution of patients (N=67)

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%

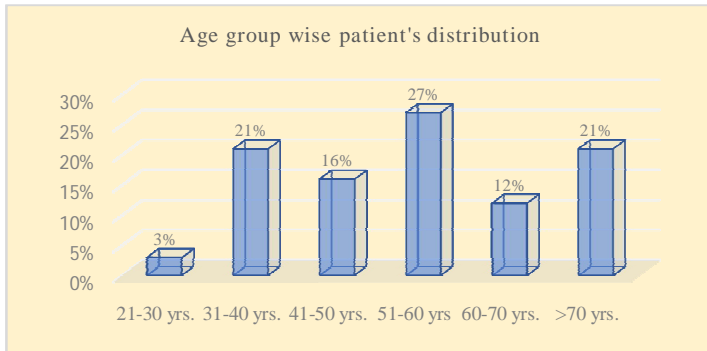


Figure 2: Bar chart showed gender distribution of patients (N=67)

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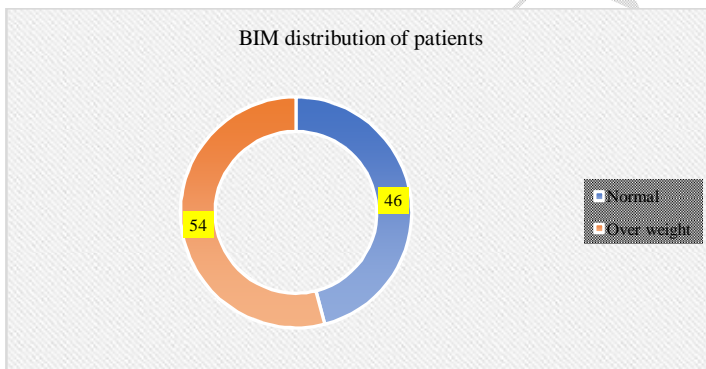


Figure 3: Ring chart showed BMI distribution of patients (N=67)

Table 2: Distribution of major symptoms among patients (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%

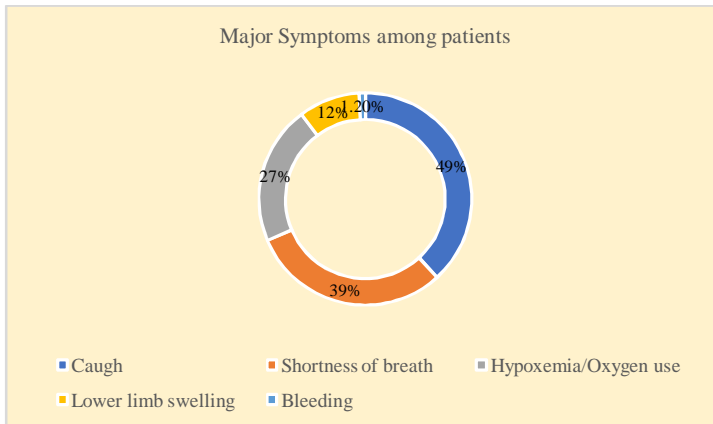


Figure 4: Ring chart showed BMI distribution of patients (N=67)

Table 3: Distribution of comorbidities among patients (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%

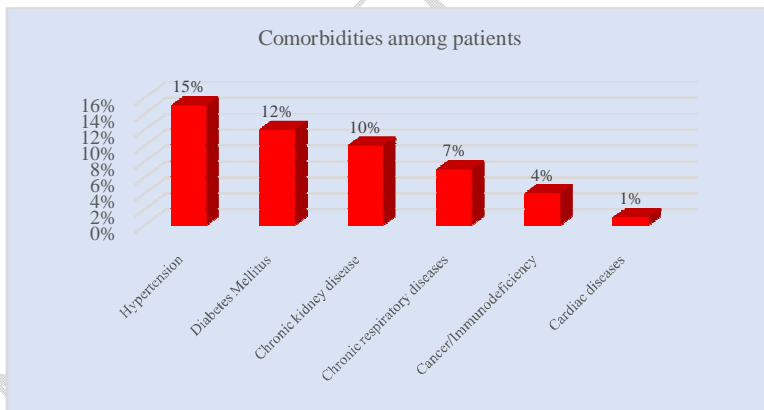


Figure 5: BMI distribution of patients (N=67)

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

Characteristics	n	%
Survival		
Cured	65	97%
Death	2	3%
Hospital staying in 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 (Day)	13.5	

4. DISCUSSION

The aim of this study was to evaluate major symptoms and outcome of covid-19 positive patients. In this study, among total 67 patients, 70% were male whereas the rest 30% were female. So male patients were dominating in number and the male-female ratio was 2.33:1. These findings were 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 a study [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) which was in 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 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. All 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 was 13.5 days.

Limitation of the study:

Though it was a single centered study with small sample size and was conducted at a very short period of time, 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, ICU facilities can decrease the sufferings, 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 for conducting similar more studies in several places with larger sized samples.

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Comment [f11]: This proportion 7: 3 M/F this result can be a confounder? Is necessary to make a stratum analysis to show with robust evidence if the sex ration is not a confounder.

Comment [f12]: Unit of BMI?

Comment [f13]: Cutoff?

Comment [f14]: From January to December is not short time, think about the study design this study was a cross-sectional limited and poor data analysis, a prospective cohort study as main characteristic 'incidence' in this study there was not an incidence, C.I, P value it is a Cross-sectional and descriptive.

If you use the Regression for example this sample size is very small but very small less 100, you will have C.I (2-200) without precision if you use P value P > 0.05 statistically not significant. Data analysis is absent, because the sample size is very less.

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