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Original Research Article

Risk Factors and Major Symptoms in COVID-19 Suspected Patients: A Single-Center Study in Bangladesh

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Abstract

Background: The outbreak of Covid 19 started in China in December 2019 and from then it rapidly spread around the whole world. Know a day, knowledge on the risk factors as well as the major symptoms of Covid 19 for its early detection and successful treatment of suspected Covid 19 patients. ***Aim of the Study:*** The aim of this study was to assess the risk factors and major symptoms in covid-19 suspected patients. *Methods:* This was a cross-sectional study and was conducted in the Department of Medicine, Shahabuddin Medical College Hospital, Gulshan, Dhaka, Bangladesh, during the period from November 2020 to March 2022. In total 126 suspected Covid 19 patients attended the mentioned hospital during the study period were selected as the study people. Data were collected from patients and/or their attendants through direct or telephonic interview by using a pre-designed questioner. The statistical analysis was done by the SPSS version 22.0. ***Results:*** In this study, in analyzing the risk factors among the participants we observed that, 10% and 7% were with 'recent exposure to a Covid 19 patient' and the 'higher length of symptoms before the indexing' respectively which were noticeable. Besides these, 6%, another 6%, 3% and 2% were with Bilateral lung infiltrates, peripheral lung infiltrates, Neutrophil count <7.5 × 103/L and LDH > 500 U/L respectively. As the major symptoms, the highest number of participants was with cough which was found among 54%. Besides this, 38%, 23% and 17% patients were found with shortness of breath, Hypoxemia/Oxygen use and lower limb swelling respectively. ***Conclusion:*** As per the findings of this current study we can conclude that, the 'recent exposure to a Covid 19 patient' and the 'higher length of symptoms before starting treatment, may be considered as the most potential risk factors for suspected Covid 19 patients. On the other hand, cough is the most common symptoms for suspected Covid 19 patients.

Keywords: Covid 19, Risk factors, Symptoms, Suspected patients, RT-PCR.

1. INTRODUCTION

In December 2019, a novel coronavirus which is related to SARS-CoV-2, emerged in Wuhan of China, causing severe pneumonia [1]. In Bangladesh, the first Covid-19 cases were detected on the 8th March, 2020. Covid 19 is generally transmitted through the respiratory droplets as well as close contact [2]. The major symptoms, risk factors and clinical presentation of Covid 19 are not specific and can mimic other viral infections. Symptoms like fever, malaise, cough and frank pneumonia are common for most of the viral respiratory tract infections including Influenza, Syncytial Virus (RSV), Respiratory Human Metapneumovirus (HMP) and many others [3]. On the other hand, diagnosis of this disease is very complicated by false-negative results which may reach up to 30% and false-positive results in the range from 1% to 2% [4, 5]. For its nature it is very difficult to identify confirm cases of Covid 19 from suspected cases. Till now, there is limited data regarding the differences between patients with confirmed Covid 19 and those who eventually were considered not to have Covid 19 [6, 7]. Besides these, now unusual manifestations, such as "patients without respiratory symptoms" or only very mild symptoms are rising worldwide [8]. In treating Covid19 cases, understanding of regional features are always considered as important task. A number of studies elaborating local demographic, epidemiological

and clinical features as well as risk factors have been published [9].

2. METHODOLOGY

This was a cross-sectional study and was conducted in the *Department of Medicine*, Shahabuddin Medical College Hospital, Gulshan, Dhaka, Bangladesh, during the period from November 2020 to March 2022. In total 126 suspected Covid 19 patients attended the mentioned hospital during the study period were selected as the study people. Proper written consents were taken from all the participants or from their legal guardians according to the revised declaration of Helsinki. The protocol of the study was approved by the ethical committee of the mentioned hospital. All demographic data regarding age, sex, address, contact history etc. and clinical data regarding the symptoms on admission, comorbidities and their durations of disease were recorded. Qualitative variables like fever, cough, dyspnea, headache etc. were expressed as frequency and percentage. Tests of significance were performed by unpaired t-test for quantitative variable and Chi square test for qualitative variables compared separately in different clinical presentation. Besides these, the multivariate logistic regression analysis of possible risk factors was performed to determine the association with mortality by calculating odds ratio with 95% confidence intervals. The "p" value, <0.05 was be considered as significant. Data were collected from patients and/or their attendants through direct or telephonic interview by using a pre-designed questioner. The statistical analysis was done by the SPSS version 22.0.

3. RESULT

In this study, among total 126 participants, 46% were male whereas 54% were female. So female participants were dominating in number and the male-female ratio was 1:1.17. In this study among all the participants the highest number of patients was from 41-50 years' age group which was 31.7%. Besides this, the number of patients from ≤ 30, 31-40, 51-60- and 61-70-years' age groups were noticeable (>12%). In analyzing the BMI of the participants, we observed that, majority of the participant possessed normal BMI which was found among 66% participants. In this study, in analyzing the risk factors among the participants we observed that, 10% and 7% were with 'recent exposure to a Covid 19 patient' and the 'higher length of symptoms before the indexing' respectively which were noticeable. Besides these, 6%, another 6%, 3% and 2% were with Bilateral lung infiltrates, Peripheral lung infiltrates, Neutrophil count <7.5 × 103/L and LDH > 500 U/L respectively. As the major symptoms, the highest number of participants were with cough which was found among 54%. Besides this, 38%, 23% and 17% patients were found with shortness of breath, Hypoxemia/Oxygen use and lower limb swelling respectively. In this current study, Hypertension was found as the most common comorbidity which was found in 24% participants.

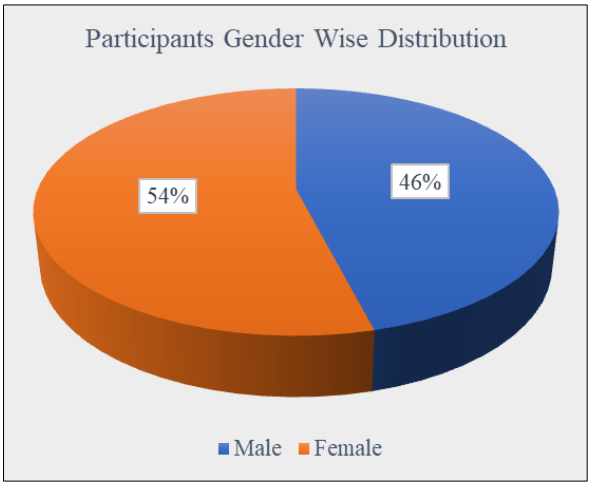

Figure 1: Gender distribution of participants (N=126)

Table 1: Age distribution of participants (N=126)

Age (Year)	Frequency (n)	Percentage (%)
≤ 30 yrs.	16	12.7
31-40 yrs.	22	17.5
41-50 yrs.	40	31.7
51-60 yrs.	22	17.5
61-70 yrs.	17	13.5
≥ 70 yrs.	9	7.1

Table 2: BMI distribution of participants (N=126)

BMI	Frequency (n)	Percentage (%)
Normal (18.5-24.9)	83	66%
Overweight (25.0-29.9)	43	34%

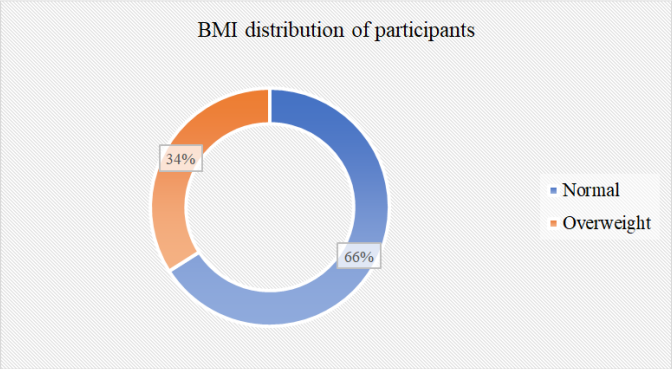

Figure II: Participants BMI Distribution (N=126)

Table 3: Risk factors distribution of participants (N=126)

Risk factors	n	%
Recent exposure to a Covid 19 patient	13	10%
Length of symptoms before the indexing	9	7%
Bilateral lung infiltrates	8	6%
Peripheral lung infiltrates	7	6%
Neutrophil count <7.5 × 103/L	4	3%
LDH > 500 U/L	2	2%
Total	**43**	**34%**

Table 4: Major symptoms distribution of participants (N=126)

Symptoms	n	%
Cough	68	54%
Shortness of breath	48	38%
Hypoxemia/Oxygen use	29	23%
Lower Limb Swelling	21	17%

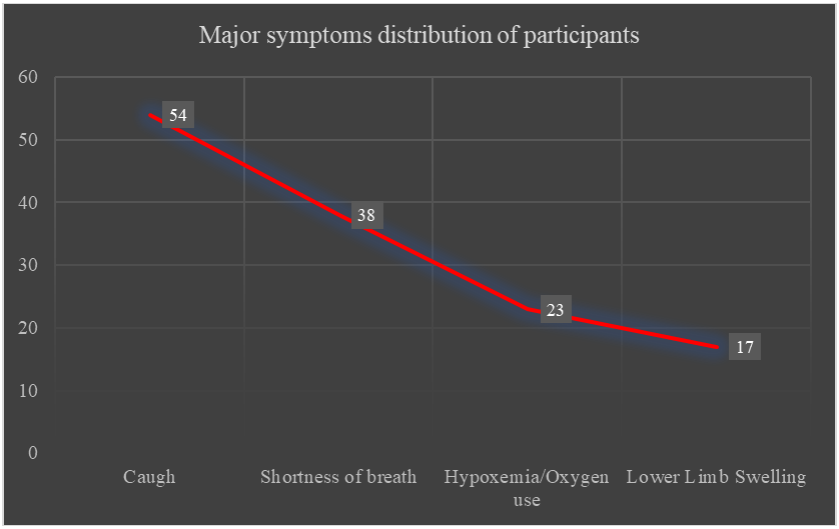

Figure III: Major symptoms distribution of participants (N=126)

Table 5: Comorbidities distribution of participants (N=126)

Characteristics	n	%
HTN	30	24%
DM	14	11%
IHD	3	2%
CKD	2	2%
PCOS	1	1%

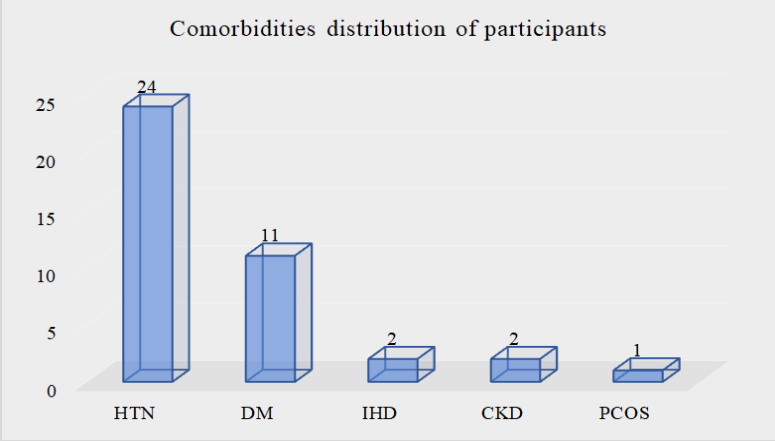

Figure III: Participants Comorbidities Distribution (N=126)

4. DISCUSSION

The aim of this study was to assess the risk factors and major symptoms in covid-19 suspected patients. SARS- CoV-2 (Coronavirus) is an emerging respiratory virus which commonly causes not any or mild respiratory tract infection as well as it is occasionally complicated by severe pneumonia [10]. Chen *et al.*, reported that half of their patients with a history of exposure to the seafood market suspected to be the sources of the virus, and close contact with a Covid 19 infected patients, were found as the major risk factors among people who lived in Wuhan, China during the initial outbreak [11]. On the other hand, in our study, in analyzing the risk factors among the participants we observed that, 10% and 7% were with 'recent exposure to a Covid 19 patient' and the 'higher length of symptoms before the indexing' respectively which were noticeable. In many studies it was reported that, possible human-to-human transmission in a closed environment and among family members is a potential risk factor [12, 13]. Early detection of symptoms of Covid 19 is important for the successful treatment of disease [12]. In our study, as the major symptoms, the highest number of participants was with cough which was found among 54%. Besides this, 38%, 23% and 17% patients were found with shortness of breath, Hypoxemia/Oxygen use and lower limb swelling respectively. Although Covid 19 showed heterogeneous and uncharacterized symptoms, a limited number of symptoms like cough, fever, and fatigue known to be associated with infectious diseases, were considered in the biomedical literature [14] social media can provide rapid and efficient surveillance of disease risk and outbreaks [15, 16].

Limitation of the Study

This was a single centered study with a small sized sample. So, findings of this study may not reflect the exact scenario of the whole country.

5. CONCLUSION & RECOMMENDATION

As per the findings of this current study we can conclude that, the 'recent exposure to a Covid 19 patient' and the 'higher length of symptoms before starting treatment, may be considered as the most potential risk factors for suspected Covid 19 patients. On the other hand, cough is the most common symptoms for suspected covid 19 patients. Prior concept regarding risk factors and symptoms may be helpful for the health professionals to treat Covid 19 patients. We would like to recommend for conducting similar more studies with larger sized samples in several places for getting more specific findings.

FUNDING

No funding sources.

CONFLICT OF INTEREST

None declared.

ETHICAL APPROVAL

The study was approved by the Institutional Ethics Committee.

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