Clinical Profile of COVID-19 Patients: Seeking Healthcare in Diabetic Association Medical College Hospital, Faridpur

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Abstract

Background: The novel corona virus has been identified as the cause of respiratory illness in Wuhan, Hubei Province, China, since December, 2019. It has spread almost all the countries and areas in world. The first corona virus disease detected (covid-19 case) in Dhaka, Bangladesh on 8 March, 2020. Gradually numbers were rising alarmingly.

Objective: This study was carried out to find out the age and sex distribution, clinical presentations, impact of co morbidities, complications and mortality of confirmed covid-19 patients attended in respiratory medicine outdoor of a teaching hospital in Faridpur, Dhaka, Bangladesh.

Methods: It was a cross-sectional study, included 1458 patient with respiratory problem seeking help in respiratory medicine outdoor from 8th June 2020 to 25th Dec 2020. Among them 580 clinically suspected patient advised RT PCR for COVID 19 and 283 were found COVID-19 positive. Then data were collected from confirm cases and checked & analyzed accordingly.

Results: Most of the COVID-19 confirms patients were aged between 26-35 years old, and most common symptoms were fever 83% followed by cough(64.0%), shortness of breath(47.0%) and sore throat(43.0%). Regarding co-morbidities about 48.0% had diabetes mellitus followed by hypertension 35.0%, ischemic heart disease 32.0% and bronchial asthma 29.0%. About 29.0% of the Covid-19 positive patients were admitted in hospitals. After recovery 45% of the admitted patient developed post COVID-19 symptoms.

Conclusion: Corona viruses cause mild respiratory symptoms most commonly fever, cough or runny nose to severe respiratory distress followed by death. Middle aged male were more affected but severity and mortality was higher in elderly, and in co- morbid patients, so management of this group should be done more cautiously. Most of the severe cases developed multiple post COVID-19 symptoms so regular follow-up should be given even after cure from COVID-19

Keywords: COVID-19, Co-morbidity, RT-PCR, Post COVID symptoms.

Introduction

The world health organization declares covid-19 as a global health emergency. It is a single-stranded RNA virus also name as SARS-CoV-2 that causes severe respiratory distress syndrome.[1] A novel coronavirus 2019 first spark as an outbreak in china in December, 2019 caused severe epidemics around the world and followed by a pandemic. Though some corona patients reached a devastating epidemics outcome, others show mild to moderate respiratory infections, like the common cold[2]. Coronaviruses (covs) refer to a family of enveloped, positive-sense, single-stranded, and highly diverse RNA viruses.[3] There are four genera (alpha, beta, gamma, and delta), among which α-coronavirus and β-coronavirus attract more attention because of their ability to cross animal-human barriers and emerge to become major human pathogens.[4] The severe acute respiratory syndrome coronavirus SARS- CoV outbreak in 2002 and the Middle East respiratory syndrome coronavirus MERS- CoV outbreak in 2012, 2019-nCoV is the third coronavirus to emerge in the human population in the past two decades an emergence that has put global public health institutions on high alert.[5] Although the case-fatality rates for sars-cov and middle east respiratory syndrome coronavirus MERS-CoV are higher, SARS- CoV-2 is considerably more transmissible, most likely through sustained community and asymptomatic human-to-human spread by direct contact, respiratory droplets, or airborne transmission.[6] The patho-physiological features of severe covid-19 are dominated by an acute pneumonic process with extensive radiologic opacity and, on autopsy, diffuse alveolar damage, inflammatory infiltrates, and microvascular thrombosis.[7] In other severe viral pneumonias, such as highly pathogenic avian influenza,[8] sars,[9] and seasonal influenza,[10] the host immune response is thought to play a key role in the patho-physiology of organ failure. Inflammatory organ injury may occur in severe covid-19, with a subgroup of patients having markedly elevated

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levels of inflammatory markers, including C-reactive protein, ferritin, interleukin-1, andinterleukin.[6,11-13]

The covid-19 pandemic in Bangladesh is part of the worldwide pandemic of coronavirus disease 2019 (covid-19) caused by severe acute respiratory syndrome coronavirus 2 SARS-CoV-2. The virus was confirmed to have spread to Bangladesh in March 2020. The first three known cases were reported on 8 March 2020 by the country's epidemiology institute, ICDDRB . In order to protect the population, the government declared "lockdown" throughout the nation from 23 March and prepared some necessary steps to spread awareness to keep this syndrome away from them. Since then, the pandemic has spread day by day over the whole nation and the number of affected people has been increasing.

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Objectives

This study was carried out to find out the age and sex distribution, clinical presentations, impact of co morbidities, complications and mortality of confirmed covid-19 patients attended in respiratory medicine outdoor of a teaching hospital in Faridpur, Dhaka, Bangladesh

Materials and Methods

In this cross-sectional study, primarily 1458 patients were included with respiratory problems and seeking help in respiratory medicine outdoor department from 8th June 2020 to 25th December 2020. Among them 580 clinically suspected patient advised RT PCR for COVID-19 and 283 were found COVID-19 positive. Data were collected from the COVID positive patients or their attendant by a structured questionnaire with proper consent. Demographic data, clinical data (symptoms, co-morbidities and their durations, etc.) were collected & compiled for analysis & were correlated with outcome. Patients were divided into two categories as severe or admitted patient and mild to moderate or non-admitted patients. Patients required hospital management and those developed post COVID complication were investigated.

Results

Table 1: Distribution of the patients according to sex (n= 283)

Sex	Frequency	Percentage
Male	162	57.24
Female	121	42.76
Total	**283**	**100.0**

Table 1 shows, among the positive patients 162(57.24%) patients were male and other 121(42.76%) were female

Table 2: Distribution of the patients according to age (n=283)

Age group	Frequency	Percentage
18-25	56	20
26-35	90	32
36-45	42	15
46-55	50	18
56-65	25	09
66-75	12	04
75 and above	8	03
Total	**283**	**100.0**

Table 2 shows that most(32%) of the patients were aged between 26 to 35 years and between the ages of 18 to 25 years old were 20%

Table 3: Distribution of the patients according to presenting symptoms (n=283*)

Symptoms	Frequency	Percentage
Fever	235	83
Cough	181	64
Shortness of breath	133	47
Sore throat	122	43
Anosmia	85	30
Asymptomatic	23	08
* Multiple response		

Table 3 shows that majority i.e 235(83%) of the patients present with fever followed by cough(64%), shortness of breath(47%), sore throat(43%), anosmia(30%) and about 8% were asymptomatic.

Table 4: Distribution of the patients according to their co-morbidities (n=283*)

Co-morbidites	Frequency	Percentage
Diabetic mellitus	136	48
Cerebro vascular disease	54	19
Ischemic heart disease	91	32
Hypertension	99	35
Chronic kidney disease	14	5
Chronic liver disease	8	3
Bronchial asthma	82	29
No co morbidity	107	38
* Multiple response		

Table 4 shows that most 136(48%) patients had diabetes mellitus followed by hypertension(35%), ischemic heart disease(32%) and about 38% had no co-morbidities.
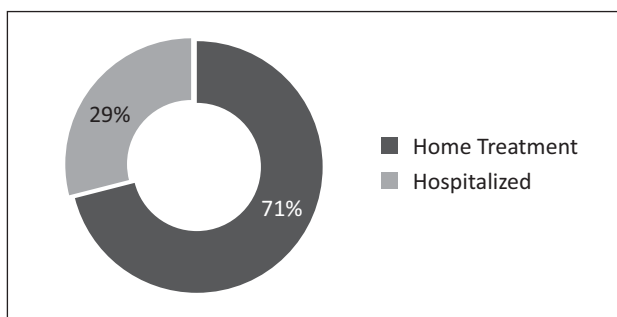
Figure 1: Distribution of the patients according to place of treatment

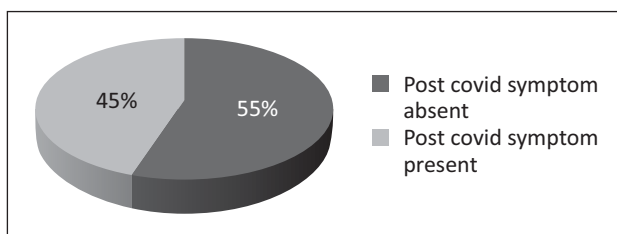Figure 1 shows that most(71%) of the patients were treated from home and 29% were hospitalized.

Figure 2: Distribution of the patients according post COVID symptoms

Figure 2 shows that about 45% of the patients develop post COVID symptoms where 55% had no post COVID symptoms

Discussion

Among 1458 patients with respiratory complaints seek help in respiratory outdoor initially 580 patients were clinically suspected and advised RT-PCR and 283 were found COVID-19 positive . The rate of affected people in this study is 49% which is higher. The main reason for this high rate of infection in this study may be it's a referral centre and we advised RT-PCR for COVID 19 only clinically suspected patient. Regarding sex distribution, in a study that included a total of 5700 patients admitted into 12 different hospitals of USA found 39.7% female and 60.3% male as Covid 19 positive.[13] In another study conducted in India males contribute to 66% of the total positive cases.[12] In a study in India, it is observed that women are half as likely to be infected by COVID-19 as men.[14] These above-mentioned results almost matches with this study result (male 57% and female 43%).

In present study, adult patients especially the economically productive age group i.e.26-35 were mostly affected (32%) and 18-25 (20%), 36-45 (15%) and 46-55 (18%) followed by elderly population like 56-65 (09%), 66-75 (04%) and 75 and above (03%). These findings were closely related to a review done by Dominic Cortis, where three studies were included. Two studies were from China by Zhang and Guan et al. and another one from South Korea by Korea Centers

for Disease Control and Prevention. The proportion of COVID-19 confirmed cases for youths (age group 0-14 year:) is lower in China (1.55%, 0.89%) than South Korea (4.04%). The predominant population affected in all three studies were 15-64year groups (76.93%, 83.98% in China and 78.60% in S.Korea) followed by elderly population (21.53%,15.13% in China and 17.36% in S.Korea).[10] A study conducted in China showed the age distribution for all patients where 61.5% were aged <60 years and the other cases were aged ≥60 years.[11] This is consistent with this study. A study conducted in India showed that 21-50 age group, contributes to the maximum proportion (60%) of the total cases followed by those below 20 years of age constituting nearly 13% of the cases.[12]

Most common symptoms among the positive patients are fever 83% followed by Cough 64%, Shortness of breath 47%.The less predominant symptoms were sore throat (43%), anosmia (30%) followed by with, headaches, chest pain, abdominal pain, diarrhea, vomiting, bleeding manifestation and psychosis in a few number of patients. There were 8% of asymptomatic patients. In a meta-analysis that included seven articles published from 24th Jan to 16th March, 2020 revealed that fever was the predominant symptom (88.8%) followed by dry Cough(68%) fatigue (33%), productive cough (28.5%), muscle pains (14.4%), diarrhea (4.4%) ,nausea or vomiting (4.1%), rhinorrhea (3.2%), chest and abdominal pain(0.15%).[15] Similarly, a study in a hospital of Wuhan, China found fever (98%), cough (76%), dyspnea (55%), myalgia or fatigue (44%), sputum production (28%), headache (8%), hemoptysis (5%), and diarrhoea (3%) as common symptoms.[16] In another meta-analysis, found similar result, where most prevalent clinical symptom was fever (91.3%), followed by cough (67.7%), fatigue (51.0%) and dyspnea (30.4%).[17] These above-mentioned studies closely matched with the result of this study.

Considering co-morbidity, Common co-morbid conditions found were as follows: DM (65%) HTN (48%), IHD (42%), followed by, CVD (54%), Bronchial asthma (29%), CKD (5%) CLD (3%).In a meta-analysis, as mentioned above revealed hypertension (15.8%) as the most common co morbidity followed by other cardiovascular and cerebro-vascular conditions (11.7%) , endocrine disorder primarily diabetes (9.4%), co-existing infection like HIV and Hepatitis B (1.5%),malignancy (1.5%), respiratory system disorder, e.g. COPD and others (1.4%), renal disorders (0.8%) and immunodeficiency states (0.01%).[15] Almost similar results were found in another retrospective, multicenter cohort study , where 48% patients had co morbidities, with hypertension being the most common (30%), followed by diabetes (19%) and coronary heart disease (8%).[18] In a population-based surveillance for laboratory-confirmed COVID-19-associated hospitalizations in the United States, among 1,482 patients,12% adult patients had one or more underlying conditions; the most common were hypertension (49.7%), obesity (48.3%), chronic lung disease (34.6%), diabetes mellitus (28.3%) and cardiovascular disease (27.8%).[19]

In this study it was found that, DM as the most common co morbidity followed by hypertension and not matched to other studies. May be due to being a diabetic specialized tertiary level hospital a great number of patient come here with diabetes and its complications. About 29% of the positive patients got hospitalized and 45% of the patients after recovery developed post covid symptoms mostly of shortness of breath, easy fatigability, joint pain, allergic problem, and generalized weakness.

Conclusion

COVID 19 causes mild respiratory symptoms most commonly fever, cough or running nose to severe respiratory distress followed by death. Middle aged, male are more affected but more severe form in elderly, severity and mortality is high in elderly and co-morbid patient. After recovering from severe or admitted Covid-19 some patients developed post COVID-19 complications. This study doesn't represent the overall scenario of our country. So countrywide research may provide more accurate data regarding COVID-19.

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