RESEARCH ARTICLE

Sociodemographic profile and clinical outcome of mild–moderate COVID-19 patients admitted in a dedicated COVID hospital during first wave of pandemic

Soumya Sarathi Mondal¹, Anamika Bhadra¹, Samudra Guha², Arup Chakraborty¹

¹Department of Community Medicine, Medical College, Kolkata, West Bengal, India, ²Department of Biochemistry, Medical College, Kolkata, West Bengal, India

Correspondence to: Arup Chakraborty, E-mail: dr.arupchakraborty@gmail.com

Received: January 28, 2022; Accepted: February 18, 2022

ABSTRACT

Background: COVID-19 pandemic quickly became significantly major cause of worldwide morbidity and mortality over the next years till date in an unforeseen manner. Aims and Objectives: Our study aims at unfolding the sociodemographic, epidemiological, and clinical characteristics of this disease, based on a metropolitan dedicated tertiary care hospital of India. Materials and Methods: Along with patient particulars, we recorded sociodemographic data, presenting symptoms, vital parameters, and blood parameters based on a pre-designed questionnaire, followed by complication analysis for 101 patients. Written consent was taken from each of the respondent before the interview and ethical approval was taken from Institution Ethics Committee (IEC) of Medical College and Hospital. [(Ref No. MC/KOL/IEC/Non-Spon/842/11/2020), Date- 5/11/2020]. Results: This study justified the trend of already available data such as median age of presentation (40–69 years), higher urban population (85.1%), higher rate of infection in health-care professionals (12.9%), and in patients with poor socioeconomic status. It revealed increased community transmission (74.3% with no definitive exposure), higher number of symptomatic cases admission (74.3% with no definitive exposure), higher number of symptomatic cases admission (89.1%) with most common symptoms being fever (46%), shortness of breath (45%), sore throat (32%), and cough (26%). Hypertension (48%) and diabetes (34%) were major comorbidities in patients who were also proportionally more symptomatic and experienced more adverse effects compared to non-comorbid patients. A major chunk of the patients (46.53%) required some form of oxygen support for their treatment. Most common adverse effect was disseminated intravascular coagulation (23.76%) among which 67.74% had one or more comorbidities. We also reported slightly higher number of deaths (6.9%) compared to what other similar studies found. Conclusion: History of probable exposure was not a sole risk factor of acquiring infection, that is, community transmission was evident. Health-care professionals were at high risk of getting infected, persons with comorbidity are at the highest risk of developing symptoms as well as complications.

KEY WORDS: Socio Demographic Profile; Clinical Outcome; Mild to Moderate; COVID 19; First Wave

INTRODUCTION

The present COVID-19 pandemic is caused by a coronavirus named SARS-CoV-2. Coronaviruses (CoVs) are a large family of viruses, several of which cause respiratory diseases in humans, from the common cold to more rare and serious diseases such as the severe acute respiratory syndrome...
(SARS) and the Middle East respiratory syndrome (MERS), both of which have high mortality rates and were detected for the first time in 2003 and 2012, respectively. Since the end of 2019, the world has been witnessing the emergence of the coronavirus disease 2019 (COVID-19) outbreak and pandemic caused by a new coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Most people infected with the COVID-19 virus will experience mild-to-moderate respiratory illness and recover without requiring special treatment. Older people and those with underlying medical problems such as cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop a serious illness.[1] It is well known that the deaths due to COVID-19 are much higher among the comorbid patients. The most common comorbidities in patients who died due to the SARS CoV2 infection globally are diabetes, hypertension, kidney, or cardiovascular disease.[2]

The best way of prevention and slow down transmission is to be well informed about the COVID-19 virus, it causes and how it spreads. Self-protection and protecting others from infection by washing hands or using an alcohol-based rub frequently and not touching the face are of paramount importance.[1]

The COVID-19 virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes, so it is important to practice respiratory etiquette (for example, by coughing into a flexed elbow). There have been 199,466,211 confirmed cases of COVID-19, including 4,244,541 deaths, reported to the WHO till this study being published.[3]

Various studies have been done throughout the world regarding demographical features of first wave of COVID-19 in hospital setting and showed that the age standardized excess death rates were higher in men than women in almost all the countries,[4,5] there was no difference between geographical area of residence or international travelers. Medical workers and people having contact with a COVID-19 positive individual that were most frequent among positives, participants having at least one medical pre-existing condition were less frequently positive though that was no longer significant after multiple testing adjustment.[5] Narendra Kumar et al. reported from Karnataka state that 91% (n = 3404) patients were asymptomatic compared to only 9% symptomatic cases.[6,7] The majority of the patients were from domestic travel to or from affected states and close contact with COVID-19, significant proportion of patients were asymptomatic and among symptoms cough followed by fever and nasal symptoms were most common, the majority of patients were managed conservatively with hydroxychloroquine and azithromycin.[8] A similar study conducted in India described similar presentations during admission in the order of shortness of breath and fever followed by cough.[9]

With the background of these findings, the study has been conducted to find out the sociodemographical and clinical features of COVID-19 first wave in our hospital setting.

**MATERIALS AND METHODS**

A descriptive, observational, and cross-sectional study has been conducted in COVID indoor ward of a dedicated COVID tertiary care hospital of Kolkata, West Bengal; during the first wave of COVID-19. One hundred and one consecutive samples of mild-to-moderate COVID patients had been chosen by convenient sampling technique. According to the ICMR mild guidelines, mild case was defined as cases with upper respiratory tract symptoms without shortness of breath and moderate case was defined as (a) respiratory rate > 24/min and (b) SpO2 < 94% on room air. The confirmed COVID positive patients who were admitted in indoor wards were included in this study excluding the subjects who were admitted in CCU (critical care unit) and HDU (high dependency unit). A pre-tested and pre-designed questionnaire consisting of demographic, clinical, and prognostic profile had been used as a study tool. Data were coded and entered in Microsoft Excel software version 10 and analyzed in SPSS version 25 software. Written consent was taken from each of the respondent before interview and ethical approval taken from Institution Ethics Committee (IEC) of Medical College and Hospital [(Ref No. MC/KOL/IEC/Non-Spon/842/11/2020), Date - 5/11/2020].

**RESULTS**

The majority of the study subjects are Hindu by religion, residents of urban area, and belong to nuclear family. Majority subjects are illiterate and are educated up to primary level of education. The median age of the study population 55 years with interquartile range (IQR) is 40–69 years. The median monthly income is 18000/- with interquartile range (IQR) is 10000-27500/-. The most of the patients (89.1%) presented with at least one symptom at the time of admission in the hospital. The majority of the study subjects (74.3%) had pre-existing comorbidity and those hypertension and diabetes were the most common. The majority of the study subjects did not require oxygenation but those who required oxygen for respiratory distress mostly used mode of oxygen delivery were facemask and non-rebreathing mask (NRBM). The median temperature at the time of admission was 97.8°F with an IQR is 97.6–98.2°F. The most of the subjects (69.3%) did not develop any adverse events and disseminated intravascular coagulation was the most common adverse event occurred [Tables 1-4 and Figures 1-5].

**DISCUSSION**

The median age of the study population 55 years with interquartile range (IQR) is 40–69 years. The median...
The most of the patients (89.1%) presented with at least one symptom at the time of admission in the hospital. The majority of the study subjects (74.3%) had pre-existing comorbidity and those hypertension and diabetes were the most common. The majority of the study subjects were not oxygen dependent but those who required oxygen used face mask and nonrebreathing mask (NRBM) as modes oxygen delivery. The median temperature at the time of admission was 97.8°F with an IQR is 97.6–98.2°F. The most of the subjects (69.3%) did not develop any adverse events and disseminated intravascular coagulation was the most common adverse event occurred.

Epidemiological profile demonstrates significantly higher Hindu patients compared to Muslim patients (96% vs 4%) in this study population. This may be due to the hospital admission monthly income is Rs.18000 with interquartile range (IQR) is Rs.30,000-40,000/-.
study in comparison to rural patients (14.9%). This can be attributed to the facts that this study has been conducted in a metro city tertiary care dedicated COVID center, the congested urban population were more exposed and contracted the disease, and, strong peripheral health centers prevented the requirement of further treatment in a tertiary care center. When we looked at the family structures of these patients, very little belonged to a joint family. Joint families are very rare in the society, still, this data also depict the fact that disease has been contracted from outside of the family. Doctors constituted a significantly major portion of the patients at 12.9% which clearly correlates with the professional exposure. Literacy proportion in the population has been roughly correlated with the general society proportion. The median monthly outcome with IQR was Rs.30,000–40,000. Poor socioeconomic status, and in turn poor standard of living, lack of COVID appropriate behavior, and inability to afford more expensive private health-care facilities may be the possible explanations for this preponderance of low income people in this study population. About 74.3% of the patients refused a definitive exposure, and among the rest, 25.7% patients who did have definitive exposure mostly constituted of health-care professionals. According to this study, probable exposure was not at all risk factor for symptom development. Disease presentation revealed that only 10.9% were asymptomatic while being admitted, whereas 89.1% patients were tested positive while being admitted symptomatic. Among the symptoms fever (46%) and shortness of breath (45%) followed by sore throat (32%) and cough (26%) were major complaints. About 43.75% ($n = 21$) of the hypertensive patients and 50% ($n = 17$) of the diabetic patients had shortness of breath at the time of presentation. Similarly, 37.5% ($n = 18$) of the hypertensive patients and 47.06% ($n = 16$) of the diabetic patients had fever during presentation. About 7% patients were drowsy and severely ill while being admitted. The majority of the patients (74.3%) had pre-existing comorbidities among which hypertension (48%) followed by diabetes (34%) was a major constituents. In this study, most patients ($n = 54$) could be managed without oxygen support, but 21 patients required oxygen support with face mask and another same number of patients were managed with non-rebreathing mask. This points to the fact that a significant number of patients (nearly half of the study population for this study) required oxygen therapy for their treatment. Adverse events have been found to be present in 30.7% of the patients among which most common adverse event was found to be disseminated intravascular coagulation (23.76%). About 67.74% ($n = 21$) of the patients having adverse effects were comorbid. While we looked for the association between comorbidity and adverse events, the probability of developing adverse events was 3.09 times higher among the subjects having comorbidity than who did not have. The relationship was found statistically significant as Fisher’s exact value 0.053 and p value 0.04. Seven patients succumbed to death and four of them had one or multiple comorbidities including diabetes and/or hypertension. This quite justified the fact that comorbid patients were more at risk of a fatal outcome. Our study had seven deaths among 90 symptomatic patients.
(7.78%). The majority of deaths were found to be in male patients.

Median age group here was found to be 40–69. Study by Tendulkar et al. described similar range at 55.85 ± 16.24 years.[8] According to the study, probable exposure was not at all risk factor for symptom development and this may be due to less sample size or misinterpretation by the subjects regarding their exposure. In contrary to this, a study done in Canada showed that medical professionals and exposed people were more frequently positive.[6] Disease presentation revealed that only 10.9% were asymptomatic and 89.1% patients were symptomatic during admission. A study conducted in Karnataka stated that 91% (n = 3404) patients were asymptomatic compared to only 9% symptomatic cases. However, our study comprised of only admitted patients, and results show that other than very few incidentally diagnosed cases, most others were clinically symptomatic and needed institutional treatment.[7] In the study, most commonly documented symptoms were fever and shortness of breath followed by sore throat and cough. The study by Tendulkar et al. described similar presentations during admission in the order of shortness of breath (73.6%), fever (64.92%), and cough (46.1%).[9] The study (n = 144) by Mohan et al. revealed that cough (34.7%) followed by fever (17.4%) and nasal symptoms (2.15%) were major symptoms.[8] This disparity may have reasons such as 1. Our study was carried out in later part of the pandemic (the later study was conducted in earlier part of the pandemic) and disease presentation evolved in the later part and 2. Pandemic management varied from state to state, and it can be a probability that asymptomatic and mild-to-moderate symptomatic cases were managed efficiently in the peripheral health-care systems, as a consequence patients with only grave prognoses were referred to tertiary care center. The majority of the patients had pre-existing comorbid conditions among which hypertension followed by diabetes were the most common. In contrast, the study reported by Mohan et al. (n = 144) showed that 11.15% patients were comorbid with diabetes.[9] One study conducted in Canada revealed that patients with pre-existing condition were less frequently positive than those without any comorbidity, though this finding became insignificant after multiple testing adjustments.[9] The majority of the patients who developed adverse events were comorbid. This correlates with the trend that comorbid patients were more at risk of complications.[6] When we compared mortality data with the study by Mohan et al., we found an increased mortality of 6.9% (as compared to 1.4%).[6] Our study had seven deaths among 90 symptomatic patients (7.78%) whereas study by Mohan et al. had two deaths among 80 symptomatic patients (2.5%).[5] This contrast in the mortality can be argued with the facts that 1. Our study population was patients with grave prognoses; 2. There was increased mass consciousness in the later part of the pandemic which could have resulted more home isolation-based treatment and less requirement of tertiary care admission; and 3. Overall mortality in our study population was actually higher. The majority of deaths were found to be in male patients. Similar trend was found in other studies as well.[5]

**Strength and Limitations:** The study has considered all probable clinical symptoms and its complications. Pediatric age group up to 12 years old and pregnant women were not included, hence, can be a limitation of the study. Multi-centric study in different settings with analytical framework could be a better option to reveal different relationships between outcomes and different factors and depict a clearer picture. We believe that this study puts a positive contribution further ahead.

**CONCLUSION**

This study threw some light on the COVID-19 epidemiological data. Many data were in line with the present trend whereas many were different from already published data elsewhere.

**REFERENCES**


**Source of Support:** Nil, **Conflicts of Interest:** None declared.