Original Article

Clinical Characteristics of Hospitalized Patients with 2019 Novel Coronavirus Infection In Tertiary Care Centres of Three States of India

Atanu Chandra[1], Uddalak Chakraborty[2], Biswajit Banik[2], Sudipta Bandopadhyay[3], Supriyo Sarkar[4], Dwijen Das[5], Prabhat Pandey[6]

Since the end of January, 2020 when the first case of coronavirus disease 2019 (Covid-19) was detected in Thrissur, Kerala and rapidly spread throughout India over a short span of time, there has been an ardent need of data on the clinical presentations of the affected patients.This study has been done by extracting data from 95 patients with laboratory-confirmed Covid-19 admitted in different hospitals of Assam, Chhattisgarh & West Bengal **from 1st May to 15th May,2020.The median age of the patients was 44 years; 62.1% of the patients were male.The most common symptomswere fever (69.47%) followed by cough(50.52%). Diarrhoea was less common (7.36%). Among the other atypical manifestations, anosmia was found in 3 patients & 2 patients developed cerebrovascular accident (CVA) during hospital stay.24 patients had associated comorbidities (like hypertension, diabetes, hypothyroidism etc.).Our findings suggest that patients with Covid-19 may often presented without fever and some atypical features.**

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Key words **: Covid-19; fever; cough; anosmia; comorbidities.**

Coronaviruses (CoVs) are spherical or pleomorphic enveloped, positive-sense, single-stranded RNA viruses (size ranges from 60 to140 nm in diameter) with distinctive club shaped spikes on their surface giving the appearance of "solar corona".[1] CoV was first recognized in the mid- 1960s. Only four strains were identified which caused mild diseases such as cough, sore throat, malaise, and fever. In 2002, severe acute respiratory syndrome coronavirus (SARS-CoV), a new strain of coronavirus was identified in China which spread to the East Asian countries claiming the lives of nearly 900 individuals (mortality rates of 10%)[2-4]. In 2012, Middle East respiratory syndrome coronavirus (MERS-CoV), another new strain of coronavirus was identified in Saudi Arabia with a higher mortality rate than SARS taking a toll of 750 lives (mortality rates of 37%).[5-6] Another strain of coronavirus was isolated from Wuhan, China on December 31, 2019 which presented with pneumonia of unknown cause.[7] The never before identified strain of coronavirus in man was named as "novel coronavirus (2019-nCoV)". The infection has now been named as "coronavirus disease 2019 (COVID-19)". The new illness continued to spread in such a large proportion affecting several countries that WHO declared it as a pandemic on March 11, 2020. The first confirmed case of COVID-19 pandemic was reported in India by end of January 2020. Since then, more than 1.3 lakh cases of COVID-19 have been reported in India, including over 3900 deaths (as on May 24th , 2020).[8]

Clinical features of patients with COVID-19 demonstrate that the SARS-CoV-2 infection can cause clusters of severe acute respiratory illness with clinical presentations simulating SARS- CoV, leading to intensive

Editor's Comment :

- **Covid 19 is an infectious disease caused by SARS Cov2 virus.**
- **Fever is usually the most common symptom of Covid 19, followed by cough and shortness of breath.**
- **Atypical presentation like anosmia have been seen in early disease or mild cases.**
- **Covid 19 has been associated with a prothrombotic state, which is an indicator of severe illness and patients may also have thrombotic manifestations like cerebrovascular accident.**

[1]MD (Medicine), DNB (Med), MRCP (UK); Assistant Professor, Department of General Medicine, R.G.Kar Medical College and Hospital, Kolkata

[2] MBBS; Post graduate trainee, Department of General Medicine, R.G.Kar Medical College and Hospital, Kolkata.

[3]DCH, MD (Medicine); Assistant Professor, Department of General Medicine, R.G.Kar Medical College and Hospital, Kolkata and Corresponding Author

[4]MD (Pulmonary Medicine), FICP, Professor and Head, Department of Chest Medicine, College of Medicine and Sagore Dutta Hospital, Kolkata

[5]MD (Medicine), FRCP; Associate Professor, Department of General Medicine, Silchar Medical, College and Hospital, Silchar

[6]MD (Medicine) MIP, FCCP, FICP, FCSI, FCGP, FIAMS, FICA, PG Dip (Diabetology), Associate Professor, Department of General Medicine, Chandulal Chandrakar Memorial Hospital, Chattisgarh

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care unit (ICU) admission and considerable mortality.[9] During the last 6 months, several studies have been published on COVID-19 describing the clinical features, laboratory findings and diagnostic evaluation of individuals suffering from this disease.

In this study, we performed a comprehensive evaluation of clinical characteristics of 95 patients with COVID-19 admitted in different hospitals of Assam, Chhattisgarh & West Bengal. Our aim was to study the clinical characteristics of those patients. These findings may help us extend our understanding of the various clinical presentations associated with the SARS-CoV-2 infection.To the best of our knowledge, there are no such studies before from this area on this topic.

Materials & Methods

We obtained the medical records of laboratory-confirmed Covid-19 patients admitted from 1st May to 15th May, 2020 to **different hospitals of Assam, Chhattisgarh & West Bengal.** A confirmed case of Covid-19 was defined as a positive result on real-time reverse-transcriptase– polymerase-chain-reaction (RT-PCR) assay from oropharyngeal and nasopharyngeal swab specimens. RT-PCR assays were performed in accordance with the protocol established by the WHO. Patients' demographical data, history of presentation & history of any comorbidities were recorded.

Continuous variables were expressed as medians and interquartile ranges or simple ranges, as appropriate. Categorical variables were summarized as counts and percentages. No imputation was made for missing data. Because the cohort of patients in our study was not derived from random selection, all statistics are deemed to be descriptive only.

Observations

We obtained data regarding clinical characteristics of 95 patients admitted in to **different hospitals of Assam, Chhattisgarh & West Bengal** from 1st May to 15th May, 2020 (Tables 1&2).

The median age of the patients was 44 years. 62.1% of the patients were male. Fever was present in 69.47% of the patients. The second most common symptom was cough (50.52%); followed by shortness of breath(36.84%). Desaturation (Spo2<94%) was present in 21 patients (22.10%). Diarrhoea was less commonly present (7.36%). Among the overall population, 25.2% had at least one coexisting illness (eg, hypertension, diabetes mellitus, obstructive pulmonary disease, chronic kidney disease etc.). Among all the comorbid illnesses, hypertension & diabetes were most common.

Discussion

Fever was found as the most common clinical feature (69.47%) in our study followed by cough (50.52%) & shortness of breath (36.84%). Diarrhoea was present in only 7 out of 95 patients.These findings are in accordance to one of the first published studies on COVID-19 by Chen *et al.* on January, 2020 from Wuhan, China, where more

Table 1 — *The summary of baseline characteristics & clinical presentations of the patients (n=95)*

Variables	Frequency	Percentage
Gender:		
Male	59	62.1
Female	36	37.9
Age:		
<45 years	52	54.7
>45 years	43	45.3
Fever	66	69.47
Cough	48	50.52
Shortness of Breath	35	36.84
Desaturation (Spo2<94%)	21	22.10
Diarrhoea	7	7.36
Anosmia	3	3.16
Cerebrovascular Accident	2	2.10

Table 2 — Showing Summary of the Associated Comorbidities (Number of Patients with comorbidities-24)

Comorbidity	Frequency
Diabetes Mellitus	16
Hypertension	19
Chronic Kidney disease	4
Obstructive airway disease	4
Hypothyroidism	6
Malignancy	3
Chronic Liver Disease	2

than 80% study population had fever and cough.10. Dyspnea on admission was found in one third of the study population. Diarrhoea was present in less than 10% of their patients. Most of them (about 90% of the patients) had more than one symptom. The next study from Wuhan, published in the first week of February also revealed thatfever was seen to be the most common symptom (99%).11 Dry cough was reported in about 60% of the cases.Another important finding reported in this study was that, 10% of the study population presented with nausea & diarrhoea 1–2 days before onset of fever.

The first case series from Europe described 5 patients of COVID-19 from France,where three of them (60%) had fever at presentation.12 In a case series from South Korea, fever and sore throat were reported in around 30% each.About 64% developed pneumonia after admission.[13] In another study from China,data were extracted from 1099 laboratory-confirmed Covid-19 patients from 552 hospitals in 30 provinces of mainland China.[14] The most common symptoms were fever (43.8% on admission and 88.7% during hospitalization) and cough (67.8%). Diarrhoea was uncommon (3.8%).

Rodriguez-Morales *et al.* analyzed 19 different studies in a meta-analysis and reported that fever, coughand dyspnoea were the most common manifestationsamong the 656 COVID-19 patients[15]. A study by Huang et al. analyzed 41 patients of Covid-19 where fever (98%) & cough (76%) were the common symptoms. Dyspnea was found in 55% of the patients, while diarrhoea was present in only 3%.[9]

Another study conducted by Bhatraju et al. studied 24 patients admitted to ICU with confirmed COVID-19 revealed that cough (88%) & dyspnea (88%) were the commonest symptom, while fever(50%) was infrequent.1658% of the patients had diabetes mellitus as co-morbidity.

A comparison of some salient clinical features in patients with Covid-19 has been made between our study and already published literature in Table 3.

Table 3 — Comparison of salient clinical features in patients with Covid-19

Study	Fever (%)	Cough (%)	Shortness of breath(%)	Diarrhoea (%)
Chen *et al.* 2020	83	82	31	2
Wang *et al.* 2020	98	59.4	31.2	10.1
Guan *et al.* 2020	43	67.8	18.7	3.8
Huang *et al.* 2020	98	76	55	3
Bhatraju *et al.* 2020	50	88	88	Not mentioned
Our study	69.47	50.52	36.84	7.36

In most of the published studies, it has been seen that fever is present in more than 80% of the patients. In our study, though fever is the commonest symptom, it has a comparatively lesser frequency. This may be due to the fact that, many of our patients were minimally symptomatic or asymptomatic.

Another two interesting findings in our study was presence of anosmia in 3 patients and development of Cerebrovascular accident (CVA) in 2 patients during hospitalization. Anosmia as an atypical presentation of Covid-19 patients has been based on many anecdotal reports, but some studies have revealed loss of smell with or without dysgeusia has been found in early stage of the disease, specially in patients with none or minimal symptoms.17A multinational group has suggested that on evaluating patients with acute-onset loss of smell or taste, particularly in the context of a patent nasal airway, there should be a high index of suspicion for concomitant

SARS-CoV-2 infection.[18] Avula, Akshay et al. reported a series of four Covid-19 patients with acute stroke as a presenting symptom.[19] The pathophysiology of stroke in Covid-19 is debated. Some studies have suggested a prothrombotic state in patients with Covid-19, while some studies have demonstrated hypercoagualibilty precedes or coincides with severe illness.[20]

Thereforeour study finding suggests that proper clinical assessment and regular monitoring should be done in all patients infected with CoV .However further studies are needed in this aspect.

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