

Original Article

A Preliminary Clinico-epidemiological Depiction of COVID-19 Outbreaks of South Bengal

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On account of the rapid spread of coronavirus infection across India over the last few months, a fervid need is there for the evaluation of the epidemiological trends of the affected individuals. There is no definite pharmacological molecule for coronavirus disease (COVID 19) so far. Our article is aimed to make out the disease outline and fend off further spread and grow- management strategies. Diagnosis was made on the basis of real time reverse transcription -polymerase chain reaction test (RT-PCR). Clinico-demographic and biochemical and laboratory parameters were taken from different hospitals of Paschim Medinipur district, West Bengal. A total of 112 diagnosed cases of COVID-19 were included as study subjects, among which 72 patients were asymptomatic whereas 40 patients were symptomatic on admission. The calculated mean age was 31.9 years with male predominance. The major presenting symptoms included cough (13%), fever (12.5%) and shortness of breath (11%). Majority patients (88.4%) had no comorbidity. Our study suggests that patients with Covid19 may remain asymptomatic or symptomatic. So we need to isolate them.

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Key words : Corona, Covid 19, Cough, Comorbidity.

In December 2019 a novel member of human infective agent newly identified in Wuhan, China, known as the coronavirus. Later it was named as coronavirus disease 2019 (Covid-19). The causative agent for COVID 19 is severe acute respiratory syndrome coronavirus 2 (SARS CoV 2), a novel coronavirus that has wrecked a havoc and declared as an expansive global pandemic by the WHO on 11th March 2020.

It was established that the SARS-CoV-2 belongs to the beta-coronavirus 2b lineage in the phylogenetic tree. By examining the full-length genome of SARS-CoV-2, it was discovered that this novel virus shared 87.99% identity sequencing with the bat SARS like coronavirus¹, and it shared ~80% identity nucleotide with the original SARS epidemic virus². Based on the preliminary information of this novel virus, it is considered that SARS-CoV-2 is the third zoonotic

Editor's Comment :

- The novel coronavirus disease has myriads of presentation.
- Fever, cough and shortness of breath are the major clinical presentation.
- Testing and isolation is paramount importance to prevent the spread of infection.

human coronavirus of the century³. Furthermore, clinical evidences have advocated that this virus is transmissible from person to person^{4,5}. The structure of the 2019-nCoV is very similar to bat corona viruses⁶. There is much debate regarding the origin of the infection, but the transmission is believed to be started from the Huanan Seafood Wholesale Market⁷.

The clinical range of COVID 19 differs, ranging from mild to moderate symptoms of non productive cough, fever, headache, anosmia, rhinorrhea, sore throat, difficulty in breathing, vomiting and loose motion to signs and symptoms complex of pneumonia, respiratory failure, acute respiratory distress syndrome (ARDS) and dysfunction of multiple organ system⁸.

The aim of our study is to narrate the epidemiological trends of these patients ranging from their demographic profile, clinico-laboratory evaluation and treatment outcome.

MATERIALS AND METHODS

All patients diagnosed with Covid-19 infection

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admitted to the different Hospitals of Paschim Medinipur, West Bengal from 7th June to 30th June, 2020 were enrolled. These hospitals have been deputed for isolation and management of COVID 19 patients according to the existing Government protocol. The hospital staffs involved in the management of COVID 19 patients have taken all preventive measures. A suspected case is defined as “symptomatic or asymptomatic patient with travel history to states with COVID 19 patients over the previous last 14 days, or who had exposed themselves to COVID 19 positive patients in the community,” were admitted in these hospitals or observed in quarantine centres respectively. The nasopharyngeal and throat swabs were being tested at the Department of Microbiology in Midnapore Medical College using reverse transcription polymerase chain reaction (RT PCR) to confirm SARS CoV 2 infection. All laboratory confirmed cases were included in the present study. Furthermore, the demographic data, medical and exposure history, subjacent comorbidities, clinical findings, laboratory parameters, chest X-ray and treatment measured were recorded.

This hospital based observational descriptive study was conducted in the different Hospitals of Paschim Medinipur, West Bengal. One hundred and twelve (112) COVID 19 patients were enrolled to find the epidemiologic trends. The quantitative variables and qualitative measures were defined with mean ± standard deviation (SD) and proportion respectively. The frequencies of categorical variables were compared using the chi-square test as appropriate. Statistical analyses were performed using JASP software (Version 0.13.0.0). The tests with P value of <0.05 were considered statistically significant.

OBSERVATIONS

A total of 112 patients diagnosed as COVID-19 were included in this study, among which 72 patients were asymptomatic whereas 40 patients were symptomatic on admission. The average time period needed for RT PCR conversion from positive to negative test profile was 9 ± 5.63 days. The mean age for all patients was 31.9 years with SD ± 12.89 years and about 83.9% of patients were male. The demographic profile

of study patients is depicted in Table 1. Majority patients were migrant labourer (81%) from different states of India. The number of patients coming from different regions of the district of Paschim Medinipur is represented in the map (Fig 1).

The clinical profile is summarized in Table 2. Of note, 64% and 36% patients were asymptomatic and symptomatic respective. Common clinical manifestations in the order of frequency being cough (13.5%), fever (12.5%), shortness of breath (11%), headache (3.5%), diarrhea (3.5%), nausea(2.5%), sore throat (2%) and weakness (2%) respectively. Thirteen patients (15%) had coexisting comorbidities including diabetes mellitus type 2 (five patients), Hypertension

Table 1 — Demographic Profile of the COVID -19 patients (n=112)

Variable	Level	Frequency	Total	Proportion	x ²	p
Gender	Male	94	112	0.84	51.57	<0.001
	Female	18	112	0.16		
Age group	12-39	81	112	0.723	82.53	<0.001
	40-60	26	112	0.232		
	>60	5	112	0.045		
Education	No education	6	112	0.054	240.34	<0.001
	Primary	99	112	0.884		
	Secondary	5	112	0.045		
	Higher	2	112	0.018		
Marital status	Married	82	112	0.732	24.14	<0.001
	Single	30	112	0.268		
Family size	2-5	40	112	0.357	21.72	<0.001
	6-10	56	112	0.500		
	>10	16	112	0.143		
Resident	Native	21	112	0.187	43.75	<0.001
	Migrant	91	112	0.813		

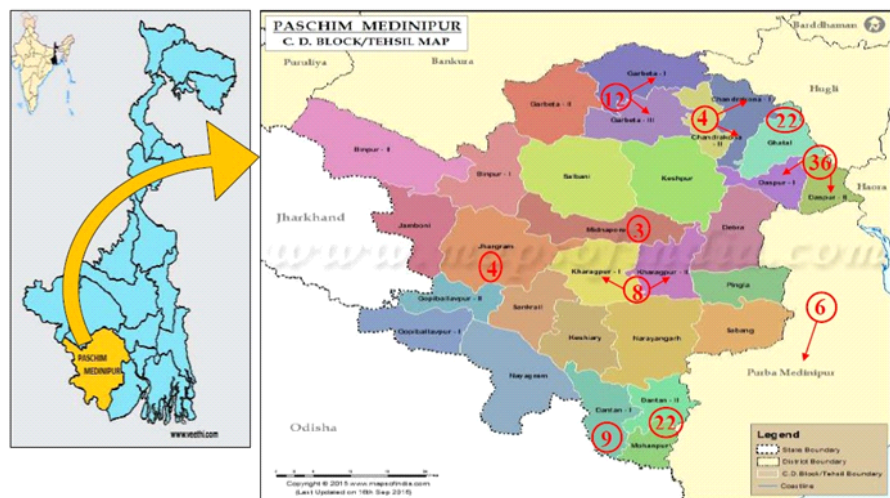


Fig 1 — Map of the district of Paschim Medinipur. Represents the number of patients coming from different regions of Paschim Medinipur

Table 2 — Clinical profile of the COVID 19 patients (n=112)					
Variable	level	Frequency	Total	Proportion	X ² p
Symptoms :					
Asymptomatic	Present	72	112	0.643	9.14 <0.005
	Absent	40	112	0.357	
Cough	Present	15	112	0.134	60.04
	Absent	97	112	0.866	
Shortness of breath	Present	12	112	0.107	69.14
	Absent	100	112	0.893	
Fever	Present	14	112	0.125	63
	Absent	98	112	0.875	
Sorethroat	Present	2	112	0.018	104.14 < 0.001
	Absent	110	112	0.982	
Diarrhea	Present	4	112	0.036	96.57
	Absent	108	112	0.964	
Nausea	Present	3	112	0.027	100.32
	Absent	109	112	0.973	
Weakness	Present	2	112	0.018	104.14
	Absent	110	112	0.982	
Headache	Present	4	112	0.036	96.57
	Absent	108	112	0.964	
Comorbidities :					
Comorbidities	Present	13	112	0.116	66.04
	Absent	99	112	0.884	
CVA	Present	2	112	0.018	104.14
	Absent	110	112	0.982	
Hypertension	Present	3	112	0.027	100.32 < 0.001
	Absent	109	112	0.973	
Type 2 Diabetes	Present	5	112	0.045	92.89
	Absent	107	112	0.955	
Chronic Obstructive Pulmonary Disease (COPD)	Present	3	112	0.027	100.32
	Absent	109	112	0.973	

(three patients), chronic obstructive pulmonary disease (three patients) and cerebrovascular accident [CVA] (two patients) (Table 2).

Table 1 and Table 2 represents demographic and clinical profile of COVID 19 patients respectively (n = 112). There are significant differences in the distribution of COVID 19 patients within variables.

Out of 112, 4 patients had lower oxygen saturation on room air and they needed oxygen and rest did not require any oxygen support. All patients who needed



Fig 2 — Bilateral pneumonitis (L>R) including consolidation with effusion in left.

oxygen support were male and had history of being chronic smoker. 3 out of 4 patients requiring oxygen support had one comorbidity in the form of COPD. Rest one had diabetes and developed bilateral pneumonitis (Fig 2) after infection with SARS CoV-2. He was received treatment in combination with hydroxychloroquine and antibiotics (Azithromycin + Ceftriaxone) and turned negative on the 6th day of treatment. He was discharged and advised home quarantine for 14days and is doing well in follow up.

All basic investigations were done of symptomatic COVID 19 patients and revealed abnormal chest x-ray (one), leukocytosis (two) and high random blood sugar (one).

All patients were being treated empirically in combination with hydroxychloroquine and azithromycin and discharge satisfactorily.

DISCUSSION

This study included 112 patients with Covid-19 in the the age group of 12-39 years comprising 72% of them. Our study results simulate that reported by Bhandari *et al*⁹ but younger than the age group reported by Wang *et al*¹⁰ (56.0 years), Chen *et al*¹¹ (55.5 years) and Huang *et al*¹² (49.0 years).

Most of our study subjects were male (83.9 %) that simulates the study results reported by Huang *et al* and Chen *et al* which revealed 75.0% male predominance but a bit higher than that of Wang *et al* (54.3%) and Bhandari *et al*¹³(65.6%) .

In our study 64% patients had no symptoms at

presentation which was more than that reported by Bhandari *et al* (33.33%). Cough was the commonest symptom (13%) followed by fever (12%) and respiratory distress (11%) in our study that was similar to Bhandari *et al* but fever was the commonest symptom reported by Chandra *et al*¹⁴ (69.47%), Wang *et al* (91.7%) and Guan *et al*¹⁵ (87.9%).

In our study, though fever, cough, and shortness of breath are the common symptoms, it has comparatively lesser frequency because of majority patients (64%) were asymptomatic.

Lastly, at the epilogue, we want to say that asymptomatic patients pose a major epidemiological risk for the society as they have the capability to spread the infection silently. So we need to isolate them.

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Conflict of Interest : None

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