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Clinical profile of COVID-19 patients at a tertiary care hospital in North India: A retrospective analysis

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Abstract
Background: Corona virus is known to human kind since 1930. It was first discovered in domesticated chicken with symptoms of pulmonary infection. Human corona virus was first discovered in 1960 and isolated from a boy suffering from common cold.
Aims and Objectives: To assess the clinical profile of corona virus patients.
Material and Methods: The present retrospective study was carried out in the Department of Medicine, World College of Medical Sciences Research and Hospital, Gurawar, Distt. Jhajjar (Haryana). A total of 498 patients were observed during the study period of May 2020 to April 2021.
Results: A total of 498 confirmed corona positive patients, having moderate to severe illness/critically ill admitted to World College of Medical Sciences Research and Hospital, Gurawar, Distt. Jhajjar were examined. Out of 498 patients admitted during the study period, there were 140 patients in severe category as per MOHFW guidelines. We found older age, delay in seeking medical help, oxygen saturation less than 90% at the time of admission, ARDS/Sepsis/Acute renal failure at admission; CRP >100 mg/L and D dimer >1000 ng/ml associated with adverse outcome.
Conclusion: Only few patients with confirmed COVID-19 & having elderly age group with other comorbid illnesses, presented with critical condition at the time of presentation. We recommend early detection of disease in symptomatic patients and timely seeking of medical help might have facilitated in reducing the mortality among COVID-19 patients.

Keywords: Clinical profile, COVID-19, retrospective

Introduction
COVID-19 is a life threatening disease and a global burden caused by SARS COV-2, 2019-nCoV. The disease was first reported in Wuhan, China in December 2019. It initially considered to be spread by Zoonotic transmission with high rate of human to human transmission and rapidly spread to rest of the world and declared as pandemic by WHO on March 11th 2020 [1]. Due to very high rate of transmission, it has become global burden to health and economy of the world facing first time in decades. It is a rapidly spreading disease involving the upper and lower respiratory tract, and has high morbidity and mortality.
As on October 19, 2020, India reported 7,550,273 cases and among them, 6,663,608 cases have recovered whereas deaths were noted in 114,642 cases all over country [2]. Novel coronavirus have affected patients in all age range and of either gender, but literature suggest that individuals belonging to advanced age group are most frequently affected [3]. Also, coronavirus infections have been reported to be higher in males as compared to females in some studies [4, 5].
COVID 19 is also known as 2019 novel corona virus nCoV, human corona virus (HCoV or HCoV19) and MERS (Middle east respiratory syndrome). Like other viral diseases, it had also mild to moderate symptoms, more infectious and spread from person to person by disease transmission in close contacts by droplets within 6 feet of distance for more than 15 minutes. Its incubation period is 2-14 days and recovery period ranges from 2 weeks in mild cases and 3-6 weeks in severe cases. Persons with smoking habits are greater risks of getting transmission from hand to mouth contact, older people >60 years with comorbid conditions such as CVD, diabetes mellitus, hypertension, surgery, cancer and COPD etc. Children, neonates are less prone to this infection but can get this.
In this study, we did a comprehensive evaluation of patients of confirmed COVID-19 who were admitted to the isolation side of World College of Medical Sciences Research and Hospital, Gurawar, Distt. Jhajjar (Haryana), which is one of the designated hospitals assigned for patients severely or critically ill with COVID-19.

Thus, the present study was conducted to compare the demographic, clinical, laboratory, and radiological features of corona virus patients.

Material and Methods

The present study was conducted as a retrospective record based study at dedicated COVID tertiary care hospital located in North India. After obtaining ethical clearance from institute's ethical committee, all the records were obtained.

Inclusion criteria

All the patients belonging to age range of more than 15 years admitted during the study period May 2020 to April 2021 diagnosed as COVID-19 by RTPCR or CBNAAT, patients having complete record and patients under severe category as per Ministry of Health and Family Welfare guidelines.

Exclusion criteria

- **Patients <15 years age**

During the study period of May 2020 to April 2021, patients were admitted at World College of Medical Sciences Research and Hospital, Gurawar, Distt. Jhajjar (Haryana). A total of 498 patients were admitted. Records of 498 patients obtained on the basis of inclusion criteria. Sociodemographic variables such as age, gender, clinical characteristics, associated comorbidities and laboratory parameters of the patients were studied. Categorical variable were expressed as percentages whereas continuous variables was expressed as mean and standard deviations.

Results

Out of 498 confirmed corona positive patients, who admitted in World College of Medical Sciences Research and Hospital, Gurawar, Distt. Jhajjar (Haryana), 140 found to be under severe category. Mean age of 40-60 years age group patients was 47.1±13.8 years and in >60 years age group, it was 76±1.9 years. Smoking history was observed in 25 patients. Hypertension, cardiovascular disease, and cerebrovascular disease were most common found among patients. Fever and cough were the most common symptoms (Table 1).

Table 1: Distribution of patients according to their presenting symptoms

Sr. No.	Symptoms	No. of patients	Percentage
1	Dry cough	240	48.19
2	Fever	60	12.04
3	Breathlessness	15	3.01
4	Loss of taste / smell	10	2
5	Altered sensorium	5	1
6	Asymptomatic	10	2
Multiple symptoms			
	Dry cough, Fever, breathlessness, loss of taste/smell, altered sensorium and asymptomatic	158	31.72

At the time of admission, all the patients were examined according to their presenting symptoms (Table 1). Most common symptoms was dry cough which occurred in 240(48.19%) patients. A total of 10(2%) patients were asymptomatic. A total of 158(31.72%) patients had multiple symptoms i.e. dry cough, fever, breathlessness, loss of taste / smell and altered sensorium etc.

Various routine investigations *viz*. Hb, TLC, platelet count, urea, serum creatinine, AST, ALT and total bilirubin was carried out, wherever applicable.

Table 2: Laboratory findings of total study population (n=498)

Parameters	Mean	Standard deviation
Hb		
>11	12.15	1.75
<11	9.16	1.21
TLC >4000	18213.8	5401.35
Platelets		
>1 lacs	2.49	0.47
<1 lacs	59172.21	41629.18
Total bilirubin		
>1	2.4	1.05
<1	0.62	0.161
SGOT	82.18	41.18
SGPT	107.18	94.41
Albumin	2.16	0.43
Creatinine		
>1.2	5.56	2.39
<1.2	0.64	0.25
Urea		
>40	123.23	76.35
<40	31.23	2.15
Sodium		
>135	135	0.71
<135	127.01	4.16
Potassium >3.5	4.15	0.97

Table 2 demonstrates laboratory findings of the total study population which showed mean Hb 12.15±1.75 in patients having >11 g/dl haemoglobin and 9.16±1.21 in <11 g/dl. Mean TLC was 18213.8±5401.35, mean platelets was 2.49±0.47 in patients having >1 lacs and patients having <1 lacs, it was 59172.21±41619.18.

Table 3: General condition of patients

Sr. No.	Parameters	No. of patients	Percentage
1	Normal	280	56.22
2	Altered sensorium	16	3.21
3	Raised temperature	24	4.81
4	Increased pulse rate	8	1.60
5	Increased respiratory rate	4	0.80
6	Decreased SpO_2	5	1
7	Abnormal chest findings	8	1.60
Multiple problems			
a.	Altered sensorium, raised temperature, increased pulse rate, increased respiratory rate, decreased SpO_2 and abnormal chest findings	153	30.72

Table 3 shows general condition of the patients during the study period. Maximum number of patients was found to be in normal condition i.e. 280(56.22%). Only 24(4.81%) patients had raised temperature and 16(3.21%) patients had altered sensorium. A total of 153(30.72%) patients had more than one or two problems as shown in Table 3.

Table 4: Comorbid illness of patients

Sr. No.	Parameters	No. of patients	Percentage
1	None	293	58.83
2	Type 2 diabetes mellitus	25	5.02
3	Coronary artery disease	15	3.01
4	CVA	25	5.02
5	Malignancy	10	2
6	HIV	5	1
7	Hypertension	25	5.02
8	Pulmonary	45	9.03
9	Others	55	11.04

Table 4 shows various comorbid illness found in the patients. Majority of patients had no associated illness i.e. 293(58.83%). A total of 25(5.02%) patients had hypertension, 25(5.02%) had type 2 diabetes mellitus, 15(3.01%) patient had coronary artery disease and 45(9.03%) patients had pulmonary problems. A total of 55(11.04%) patients as shown in table had more than one or two multiple illnesses.

Table 5: Chest x-ray findings during admission

Sr. No.	Parameters	No. of patients	Percentage
1	Normal	253	50.80
2	Mild (<25%)	50	10.04
3	Moderate (25-50%)	25	5.02
4	Severe (>50%)	40	8.03
5	Not done	130	26.10

Table 5 shows chest x-ray findings of the patients. In majority of patients i.e. 253(50.80%), chest x-ray findings were found to be normal, followed by 50(10.04%) patients had mild, 25(5.02%) had moderate and 40(8.03%) patients had severe findings. In 130(26.10%) patients, chest x-ray was not carried out.

Table 6: Complications occurred during admission

Sr. No.	Parameters	No. of patients	Percentage
1	None	285	57.22
2	Decreased oxygen saturation	43	8.63
3	Altered sensorium	25	5.02
4	Hyperglycemia	15	3.01
5	Oliguria / Anuria	5	1
6	Dyselectrolytemia	15	3.01
7	Hypoglycemia	8	1.60
Multiple complications			
a.	Decreased oxygen saturation, altered sensorium, hyperglycemia, dyselectrolytemia and hypoglycemia	102	20.48

In majority of patients, no complications were seen during the study period. In 285(57.22%) patients, no complications occurred. Only 43(8.63%) patients had decreased oxygen saturation and 25(5.02%) had altered sensorium and hyperglycemia in 15(3.01%) patients. In 15(3.01%) patients each had dyselectrolytemia and hypoglycemia. A total of 102(20.48%) patients as shown in table 6 had more than one or two multiple complications.

Table 7: Treatment protocol/management of patients

Sr. No.	Parameters	No. of patients	Percentage
1	No treatment	228	45.78
2	Symptomatic supportive treatment (Antipyretic, Antihistaminics)	120	24.09
	Multiple treatments		
a.	Symptomatic supportive treatment (Antipyretic, Antihistaminic), Steroids, Antibiotics, antiviral, Bipap support and HCQ etc.	150	30.12

All the patients were treated by using various symptomatic supportive treatment such as antipyretic / antihistaminic drugs, steroids, antibiotics, antiviral treatment and other methods. In 228(45.78%) no treatment were given. In 120(24.09%) patients, we used symptomatic supportive treatment in the form of antipyretic / antihistaminic. A total of 150(30.12%) patients as shown in table 7 had taken more than one or two multiple treatments.

Discussion

As of 8 September 2020, severe acute respiratory syndrome coronavirus type 2 (SARS-CoV-2) has led to over 26.5 million confirmed infections and 875,000 deaths from coronavirus disease-2019 worldwide [6]. Like most infections caused by members of the coronavirus family, SARS-CoV-2 manifests itself with upper respiratory tract infections and flu-like symptoms of varying severity [7]. However, COVID-19 is unique in its ability to cause a multi-organ disease, with involvement of the central and peripheral nervous system in some individuals.

In July 2020, India's Ministry of Information and Broadcasting reported country's case fatality rate lowest in the world i.e. 2.41% which is steadily declining [8]. On mid-May 2020, a total of six cities accounted for around half of all reported cases in the country *viz*. Delhi, Mumbai, Chennai, Ahmedabad, Pune and Kolkata [9]. As of 10th September 2020, Lakshadweep was the only region without any positive case [10]. On 10th June, India's recoveries exceeded active cases for the first time [11]. Infection rates started to drop significantly in September, and the number of daily new cases and active cases started to decline rapidly [12]. A Government panel on COVID-19 announced in October that the pandemic had peaked in India, and may come under control by February 2021 [13]. India has over 30 anti-COVID vaccines in various stages of development and the first of these is expected to be introduced in early 2021.

Limitations

Present study being a retrospective study, duration of comorbidities and exact associated comorbidities could not

be determined. The study was conducted on 498 patients, however, a prospective study which involve large number of patients could yield better results.

Conclusion

COVID-19 infection possess a major risk to the population across the world. It has resulted in heavy burden on healthcare system. Prevention of spread by Social distancing, face mask, regular hand sanitization and avoidance of public gathering is advised by health authority. Aggressive detection and Isolation played key role in fight against COVID19. People should be encouraged to undergo testing as soon as they become symptomatic because the delay leads to poor prognosis. Various investigations *viz*. CRP, D Dimer, Ferritin etc. should be done immediate after hospitalization to assess the prognosis.

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