Original Research Article

Clinical profile and epidemiological characteristics of COVID-19 patients admitted in the district hospital of North India- a retrospective study

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ABSTRACT

Background: During COVID-19 all the tertiary institutes were overburdened so all the peripheral institutes, mostly district hospitals were made functional to provide management to COVID-19 patients in moderate and severe cases. The study attempts to find out the clinical profile of admitted patients in one of the district hospital.
Methods: Retrospective data was studied from records of district hospital Samba when it was chosen as COVID-19 dedicated hospital.
Results: Record of 77 patients was studied and data was analyzed with the help of descriptive statistics. Chi square test was done to find out the association. Mean age was 56.8±16.19 years with male female ratio of 1.33:1. 50% males and 42.4% of females did not have any associated co-morbidities. Half of the studied participants were anemic.
Conclusions: Study showed that patients admitted in hospital presented with variable presentation and associated co morbidities were significantly associated with mortality. Peripheral institutions should be equipped with all the facilities to cope with such public health emergencies.

Keywords: Co-morbidities, COVID-19, District hospital Samba, Outcome

INTRODUCTION

In the past, several infectious disease outbreaks have been traced to viruses originating in birds, pigs, bats and other animals that mutated to become dangerous to humans. The first case of COVID-19 was reported on December 1, 2019, in Wuhan, the capital of Chin's Hubei province, and the cause was a then-new Corona virus later named SARS-CoV-2. SARS-CoV-2 may have originated in an animal and changed (mutated) so it could cause illness in humans. In a span of two years it has reached to every part of the world. Research continues, and more study may reveal how and why the Corona virus evolved to cause pandemic disease.

As per the data available worldwide (24 MAY 2023) there are 766,895,075 confirmed cases and 6935889 deaths from the COVID- 19 cases.[1] India reported first confirmed case of Corona virus disease (COVID-19) on January30, 2020, in a medical student who travelled from Wuhan, China.[2] Numbers of studies were conducted both globally and nationally to know about the virus (structure, natural history; incubation period, signs and symptoms, outcome etc). The median incubation period

was found to be ranging from 5.1 to 11.5 days and the common symptom's reported were fever, sore throat cough.[3,4] The spectrum of diseases also varies from mild to life threatening and was more devastating, serious among those who suffered from co-morbidities.

To start with spread of COVID-19 was linked to people who were residing in Wuhan, China and came in contact with other virgin population either through travel, or through other means. Various strategies were launched to combat disease globally and India also took efforts, initially the MoHFW advised to refrain from travelling to China and quarantine of those coming from China. Thermal entry screening of passengers who were coming from other countries was started in international airports and seaports. Those who were symptomatic were asked to volunteer themselves for screening and visit to nearest health facility along with home isolation was advised for those who become symptomatic within period of one month of coming from other countries.

As no vaccine and proper regimes were available focus was on non-pharmacological measures like hand hygiene, social distancing, wearing mask, following cough etiquettes and quarantine becomes the important public health tool for mitigation of COVID-19 in India. These measures were not enough to stop the spread of infection and strict lockdowns were implemented.

Tertiary institutes for want of staff and structure were not able to handle the crisis so all the peripheral institutes were made functional to provide management to CoVID-19 patients. Jammu and Kashmir union territory also faced the brunt with 44,918437 active cases, 227242 recoveries and 3662 deaths (as on 25 May 2021) and district hospital Samba along with other district hospitals in their respective districts become COVID-19 dedicated hospitals for moderate and severe cases, where for the time being OPDs were stopped for other diseases and COVID-19 patients were admitted and managed appropriately.[5,6] Data was collected from all over the country to know the dynamics of the disease.

The present study was an attempt to describe the epidemiological and clinical profile of COVID-19 patients who were admitted in district hospital Samba.

METHODS

It was a retrospective data study conducted at district hospital Samba for a period of two months May 2021 to July 2021. Study population was COVID-19 admitted Patients

Samba district is one of the 10 districts of Jammu division. Health facilities available at district Samba are one district hospital, (DH) 3 community health centers and 82 sub centres. Samba district hospital caters to a population of 344,300.[7] DH Hospital Samba is a 100 bedded hospital with all the specialty available services. Due to upsurge of COVID-19 cases in Jammu division samba district hospital was declared COVID-19 dedicated hospital.

Inclusion and exclusion criteria

All the patients whose complete record was available were included in the study. The record with missing and incomplete data was excluded.

Data collection

The record of two months were retrieved from the medical record section of district hospital Samba with due permission of medical superintendent of the said hospital. As per protocol of the hospital and records all the patients who came to hospital with symptoms suggestive of COVID-19 were categorized into moderate and severe COVID-19. The patients who were having mild symptoms but did not have short of breadth and had well maintained oxygen saturation were sent to homes after educating them about danger/referral signs. The patients with moderate and severe symptoms were admitted and managed according to the guidelines provided by Ministry of Health and Family Welfare.[8]

The data was collected from records with the help of predesigned, pre tested structured questionnaire. The data related to demographic information, clinical parameters and treatment outcome were recorded and entered into Microsoft excel sheet. The collected data was regarding age, gender, clinical profile, co morbidities, complications, outcomes, duration of hospital stay.

Statistical analysis

Descriptive statistics was used for calculating mean and standard deviation and data was presented as frequency and percentages. Chi square test was to find association between the severity of infection and the categorical variables, p value less than 0.05 was considered to be statistically significant.

RESULTS

The male to female ratio of the study participants was 1.33:1 with 4/5th of the study participants more than 60 years of age. 89.6% of the admitted patients were discharged after treatment (Table 1).

Cough and respiratory distress were the main presenting symptom followed by fever. 46.7% of patients did not have any co-morbidity and diabetes was the most common co-morbidity in admitted patients of COVID-19 (Table 2).

Table 1: Epidemiological characteristics of study participants.

Epidemiological characteristics Age (years)	Male (n=44)	Female (n=33)	Total number (%)
<30	3	1	4 (5.1)
31-40	8	3	11 (14.3)
41-50	10	6	16 (20.8)
51-60	6	9	15 (19.5)
>60	17	14	31 (40.3)
Classification on admission			
Moderate	30	18	48 (62.3)
Severe	14	15	29 (37.7)
Duration of hospital stay in days			
≤7	22	14	36 (46.7)
8-14	14	12	26 (33.8)
≥15	8	7	15 (19.5)
Outcome			
Discharged	35	29	64 (83.2)
**Expired	2	1	3 (3.9)
LAMA	3	1	4 (5.1)
Refer	4	2	6 (7.8)
Co morbidities			
Present	22	19	41 (53.3)
Absent	22	14	36 (46.7)

Mean Age= 56.8±16.19; **Out of the 3 deceased 2 were having co-morbidity (diabetes)

Table 2: Clinical profile of study participants at the time of admission.

*Clinical characteristics	Number*
Fever	47
Cough	51
Respiratory distress	50
Sore throat	2
Diarrhoea	2
Co morbidities	
Diabetes	26
Hypertension	10
COPD	3
Multiple co morbidities	2
No co morbidity	36

*Percentages are not calculated as patient's presented with more than one symptom.

Table 3: Sex wise distribution of co-morbidities among admitted COVID-19 patients.

Co-morbidities	Male	Female	Total N (%)
Diabetes	13	13	26 (33.8)
Hypertension	7	3	10 (12.9)
COPD	1	2	3 (3.9)
Multiple comorbidities	1	1	2 (2.6)
No comorbidity	22	14	36 (46.8)
Total	44	33	77

42.8% of females with COVID-19 were co-morbid, whereas half of the males do not have any associated co-morbidity (Table 3).

Table 4: Baseline vitals and laboratory parameters at the time of admission.

Parameters	Values
Respiratory rate (RR)	23 (20-30) (median/IQR)
SPO₂	79.69±9.48
Heart rate (beats/minute)	98.2±4.74
CRP Increased	39
Haemoglobin (gm/dl)	10.2±2.59
Platelets	
Normal platelets	63 (81.8%)
Decreased	14 (18.2%)
Anaemia	
Present	39 (50.6%)
Absent	38 (49.4%)
D Dimer	
Normal	32 (41.6%)
Raised	37 (48.0%)
Not done	8 (10.4%)
TLC (per micro litre)	
4000-11000	47 (61.1%)
>11000	30 (38.9%)

Half of the patients were anemic and about 41.5% of COVID-19 patients were having raised D-dimer levels. (Table 4).

Patients admitted with normal platelet count had less odds of suffering from infection and this was statistically significant also where in patients with co-morbidities have greater odds (2.2) of infection (Table 5).

Table 5: Association of COVID-19 infection with demographic and clinical characteristics.

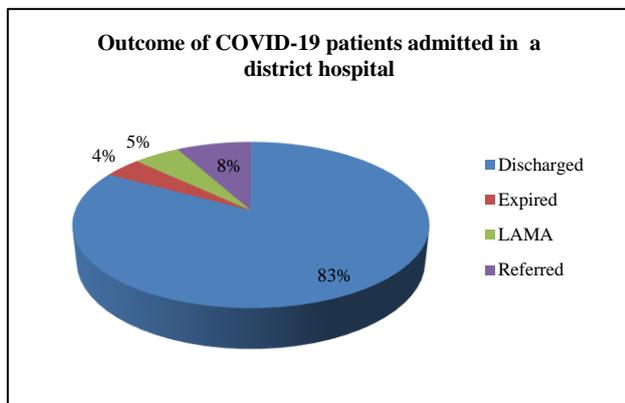| Variable	Classification on admission		OR (95% CI)	P value
	Moderate	Severe		
Sex				
Male	28	16	0.88 (0.34 -2.27)	0.78 NS
Female	20	13		
Age (years)				
≤60	30	16	0.73 (0.28- 1.88)	0.52 NS
≥60	18	13		
Co morbidities				
Present	22	19	2.2 (0.86-5.82)	0.09 NS
Absent	26	10		
Platelets				
Normal	46	17	0.06 (0.01- 0.30)	0.0004 S
Decreased	2	12		
Anaemia				
Present	32	16	0.61(0.23-1.58)	0.3 NS
Absent	16	13		

Figure 1: Outcome of COVID -19 patients admitted in hospital.

DISCUSSION

District hospital Samba was designated as COVID-19 Hospital and in a period of two months 77 patients were admitted with mean age of 56.8±16.19 years. Other studies have also reported the same mean age.[9,10] Male predominance was found in our study and this finding is reiterated in various other studies.[11-13] This can be attributed to the high exposure of male members to the external environment.

Our study included all those patients who were classified into moderate and severe cases of COVID-19. All were symptomatic and the most common symptoms were cough, respiratory distress and fever. Various other studies had reported similar symptoms as found in our study.[10,13-15]

46.7% of patients who were admitted did not have any co morbidity and of all the co morbidities diabetes (33.7%) was the most common followed by hypertension (12.9%). A latest report of July 2, 2020 by the Integrated Disease Surveillance Program, reported (2020) under the Ministry of Health and Family Welfare, India found presence of any one or more co morbidities in 57% of patients, while 43% had no co morbidities among COVID-19 patients.[16]

In the study conducted by Majid et al diabetes was the most common co-morbidity whereas hypertension was found in maximum cases in a study conducted by Tambe et al.[17] Soni et al in their study found 70.2% of patients without any co morbidity whereas Tambe et al found no co morbidity among 52.8% of admitted patients.[18] In our study 37.6% had severe disease at admission with mortality of 3.8% (3/77), Figure 1 whereas COVID constituted 29% (95% confidence interval, 28 to 31%) of deaths from June 2020 to July 2021.[19]

In our study baseline parameters were disturbed among most of the admitted patients with raised D-dimer levels and total leucocyte count and CRP levels. D-dimer is one of the measures used in patients to detect thrombosis, 53.6% of participants have raised D-dimer levels. The prevalence of the D-dimer elevation was found to be 81.8% and 76% in a study conducted by Kanakaraju et al,

Berger et al respectively.[20,21] Hospital stay in our study was two weeks in 33.7% admitted patients whereas 19.4% of patients have hospital stay for more than 2 weeks. Mathur reported hospitalization of less than 10 days among 49% of patients.[22]

The study was record based and sample size was very small so results cannot be generalized.

CONCLUSION

Among the hospitalized patients in this district hospital, breathlessness was the main presenting symptom followed by fever and cough. Co-morbidity is one of the significant risk factors for the progression of disease to death.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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