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Original Research Article

Clinical characteristics of covid 19 (SARS-CoV-2) patients at a tertiary health care centre

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ABSTRACT

Background: Global pandemic started in early December 2019 from Wuhan, China and this didn't spare any part of the world. Millions of deaths have been reported and the disease treatment has been itself challenging due to varied clinical presentation. Hence, we studied to know the clinical characteristics and comorbidities associated with SARS-CoV-2.

Materials and Methods: Observational study was conducted during period of May 2020 to July 2020 on patients diagnosed positive for SARS-CoV-2 on RT-PCR method. Study was don't know the clinical characteristics, comorbidities and outcome of the patients.

Results: Our study found out of 640 patients admitted, 70.31% were males while females were 29.68% and mostly affected were age group of 30-39 age (26.4%). Fever was observed most commonly in our study group. 77.34% patients didn't have any coexisting comorbidity in the admitted cases; Hypertension was most common among the admitted cases. We found mortality in 12.66% cases and concomitant diabetes and hypertension was leading comorbidity in the deaths of SARS-CoV-2.

Conclusion: COVID 19 has spread like wildfire globally since first reported in Wuhan, China. It has a wide spectrum of clinical presentation with no particular signs and symptoms pinpointing the diagnosis. Appropriate investigations with quicker results are needed to achieve the same.

1. Introduction

Unknown cases of pneumonia were reported first from Wuhan, Hubei, China in early December 2019.[1] RNA beta coronavirus was identified as the pathogen;[2] which was named as SARS-CoV-2 and was similar to SARS-CoV[3] (Severe Acute Respiratory Syndrome). Coronaviruses, belonging to the family Coronaviridae and the order Nidovirales, are enveloped non-segmented positive sense RNA viruses and are broadly distributed in humans and other mammals.[4]

Usually, coronaviruses infections in humans are mild, but the two beta coronavirus epidemics i.e., Severe acute respiratory syndrome coronavirus (SARS-CoV)[5–7] and Middle East Respiratory syndrome coronavirus (MERS-CoV)[8,9] have been reported to cause more than 10000 cases in the last 20 years. The mortality rates for both SARS-CoV and MERS-CoV are 10% and 37% respectively.[10,11]

2. Materials and Methods

Study was conducted by Department of Respiratory Medicine of Dr Vasantrao Pawar Medical College Hospital and Research Centre, Nashik during May 2020 to July 2020. We included patients diagnosed as SARS-CoV-2 positive

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by RT-PCR diagnostic method admitted at our hospital and patients who gave informed consent forms. We excluded the patients if there is inability to obtain informed consent from patients. The objective of the study was to:

1. Study the clinical features in COVID 19 patients
2. Know the co-morbidities in COVID 19 patients
3. Know the outcome of COVID 19 (SARS-CoV-2) patients

Observational study was conducted. The bio data, detailed clinical history was noted in pre- designed case proforma and consent was enrolled in the study. Investigations done for the patients were noted. We defined patient as cured when he/she was asymptomatic on day 7^{th} after discharge and didn't complain of cough/cold/fever/breathlessness. Patient was asked via telephonic conversation after day 7^{th} of discharge from the centre. Data was analysed with appropriate statistical methods.

3. Results

3.1. Demographic variables

During the study period i.e., May 2020 to July 2020 total 640 patients of COVID 19 (SARS-CoV-2) patients were admitted out of which 450 were males (70.31%) and 190 were females (29.68%). The most common age group affected was found to be between 30-39 years (26.4%) followed by 50-59 years group (21.71%) while the least affected group was below 10 years of age (4.53%).

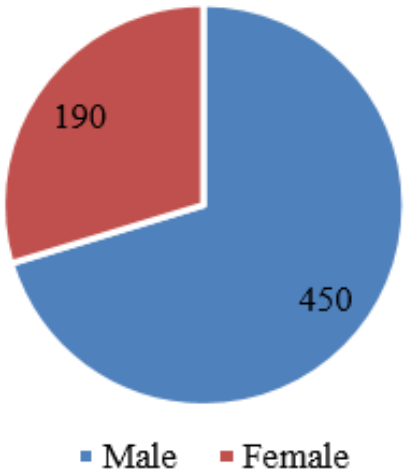

Fig. 1: Gender-wise distribution

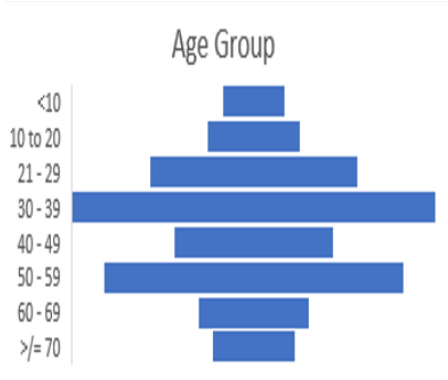

Fig. 2: Age-wise distribution

3.2. Symptoms of COVID 19 (SARS-CoV-2) patients

Asymptomatic patients were found to be leading in the study i.e.,30.31% (n=194). In symptomatic cases fever was found to be most common (30.15%) in the study. Cough was second most common symptom (25.46%). 142 patients complained of breathlessness (20.22%). Patients presenting with confusion, drowsiness had poor prognosis in the study.

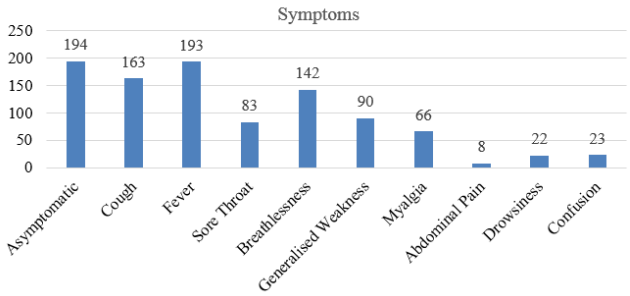

Fig. 3:

3.3. Contact history among COVID 19 (SARS-CoV-2) patients

The study period showed (May 2020 to July 2020) positive contact history among 59.68% cases (n=382). Despite no positive contact history 40.31% patients had COVID 19 (SARS-CoV-2) RT PCR positive status.

3.4. Pattern of comorbidities among COVID 19 (SARS-CoV-2) patients

In this study we found that there was no any comorbidity history among 77.34% patients (n=495). Hypertension was found to be associated more frequently in positive cases (7.03%) followed by Diabetes plus hypertension found to be 5.46% among the total cases admitted during the study

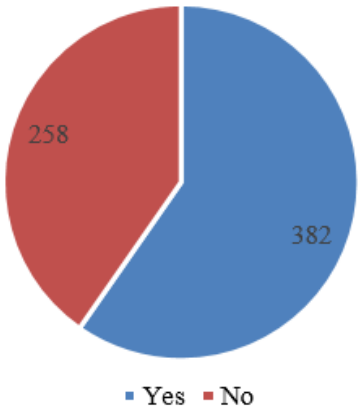

Fig. 4: Contact History

period.

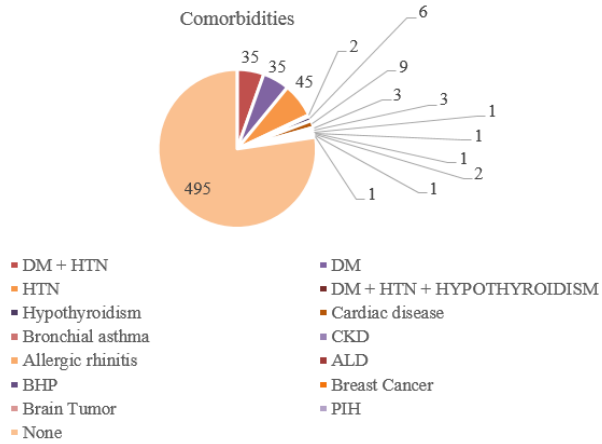

Fig. 5: Comorbidities

3.5. Outcome of COVID 19 (SARS-CoV-2) patients

Table 1: Outcome

Outcome		
Cured	559	87.34
Death	81	12.66
	640	100

87.34% patients (n= 559) were cured from the COVID-19 (SARS-CoV-2) after treatment while 12.66% patients (n= 81) died of COVID 19 (SARS-CoV-2).Table 1

3.6. Demographic characteristics of deaths

Among the death patients most affected were the males (70.37%) while females (29.63%). Age group more than 50 years were mostly prone.Table 2

Table 2: Demographic characteristics of deaths

Sex		
Male	57	70.37
Female	24	29.63
Age Group		
<10	0	0
10 - 20	0	0
21 - 29	1	1.23
30 - 39	7	8.64
40 – 49	8	9.87
50 – 59	22	27.16
60 – 69	18	22.22
>= 70	25	30.86

Table 3: Comorbid characteristics of deaths

Comorbidity		
DM + HTN	18	22.22
DM	9	11.11
HTN	14	17.28
Hypothyroidism	1	1.23
Cardiac disease	3	3.70
CKD	2	2.46
ALD	1	1.23
BHP	1	1.23
PIH	1	1.23
No	26	32.09
Other	5	6.17
	81	

The most common comorbid condition among the deaths was found to be diabetes plus hypertension (22.22%) followed by hypertension (17.28%).Table 3

4. Discussion

In the present study the more disease affection to males was seen as compared to females and the age group most affected was between 30-39 years group which was similar to study conducted by Shan-Yan Zhang et al in china.[12]

In the study performed by W. Guan et al, they concluded that diagnosis of the disease was complicated during the early stage of the Covid-19 outbreak, due to the variety of symptoms and the spectrum of disease severity at the time of presentation. Fever was identified in 43.8% of the patients on presentation.[13] On the other hand our study showed presence of fever only in 30.15% of study population.

In concurrence with recent study of Leung WK et al and Assiri A., we found that dominant symptoms were fever (30.15%) and cough (25.46%). Gastrointestinal symptoms (1.25%) were uncommon even in our study, which indicates differences in presentation of SARS-CoV, MERS-CoV, and seasonal influenza.[14,15]

The term Covid-19 positive is used to refer to patients who have laboratory-confirmed symptomatic cases without apparent radiologic manifestations. However, more insight

into the spectrum of the disease is needed, since in 8.9% of the patients, SARS-CoV-2 infection was detected before the development of viral pneumonia or viral pneumonia did not develop at all.[13]

Breathlessness as presentation among the study population was consistent with the other studies which was later associated with poor outcome. Our study found mortality of nearly 12.66%. In contrast to other studies; our study found no association of comorbidity and COVID 19 (SARS-CoV-2).

Only 22.66% had co-morbidities; among them hypertension was most common (7.03%) followed by combination of Diabetes mellitus and hypertension (5.46%) and isolated diabetes mellitus (5.46%). Paudel SS et al and Zhou F et al also found hypertension as most common comorbidity (15.8%) associated; diabetes being second (9.4%).[16,17]

We found mortality of 12.66% in our study period. There was a preponderance of deaths in patients with hypertension, diabetes mellitus and in males. Our study has few limitations. Firstly, study was conducted only over 3 months hence extensive amount of data couldn't be analysed. Secondly, we included only indoor patients and the patients treated on outpatient basis and home quarantined during the duration weren't included in participation.

5. Conclusion

COVID 19 has spread like wildfire globally since first reported in Wuhan, China. It has a wide spectrum of clinical presentation with no particular signs and symptoms pinpointing the diagnosis. Appropriate investigations with quicker results are needed to achieve the same.

6. Source of Funding

No financial support was received for the work within this manuscript.

7. Conflict of Interest

The authors declare they have no conflict of interest.

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