



SOCIO-DEMOGRAPHIC AND CLINICAL PROFILE OF PATIENTS DURING 3RD WAVE OF COVID-19 PANDEMIC ADMITTED IN TERTIARY CARE HOSPITAL AHMEDABAD INDIA.

Community Medicine

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ABSTRACT

Background: The B.1.1.529 (omicron) variant of SARS-CoV-2 was first identified in the month of December 2021, in India and was designated as 'Variant of Concern'. **Methodology:** This is a cross-sectional study, conducted in tertiary care hospital of Ahmedabad, for a duration of one month (01/01/2022 to 31/01/2022). All the patients admitted during that period were considered in the study. **Result:** Total 427 patients were admitted. Around 40% of patients were in the age group >60 years, and 58% were admitted from triage. Common presenting symptoms were breathlessness and cough. Comorbid patients have longer duration of stay which was found statistically significant. **Conclusion:** The study concludes that the patients with any comorbidity and those admitted from triage have longer hospital stay. Also, patients having any comorbidity have a higher odd of admission by triage.

KEYWORDS

Omicron, Comorbidity, Third Wave, Duration of Stay.

INTRODUCTION

Coronavirus disease 2019 (COVID-19) is a novel outbreak caused by severe acute respiratory syndrome 2 (SARS-CoV-2). On December 31 2019 the World Health Organization (WHO) reported the first case of SARS-CoV-2 infection which manifested as respiratory illness in Wuhan City Hubei Province China.^[1] The first of cases of covid-19 in India were reported on 30th January, 2020^[2] and on the same date, World Health Organization declared the COVID-19 outbreak as a Public Health Emergency of International Concern. Following on March 11 2020, it was declared to be a pandemic.^[34] The Government of India ordered a nationwide lockdown as of March 24 2020, limiting the movement of entire 1.38 billion population of India as a preventive measure to contain the spread of COVID-19.^[5] Over the time, the infection rates began to fall as did the number of new and active cases by the month of September 2020.^[6] However, due to unlocking of mass gathering, non-compliance with COVID protocol and slow vaccination drive, led to the rapid virus spread again.^[7] The second wave which began in March 2021 was far more devastating than the first with many parts of the country suffering from shortages of vaccines, hospital beds, oxygen cylinders and other medical supplies.^[8,9] However this virus like other viruses had the ability to mutate resulting in various variations that have been observed up to this point. These variants are linked to enhanced transmission and infectivity. During the preliminary stage, alpha (B.1.1.7), beta (B.1.351), delta (B.1.617.2) and kappa (B.1.617.2) were detected. Cases of delta variant on the other hand spiked dramatically in May 2021 wreaking havoc on our health-care system.^[7,10] In the month of January 2022, the world came across the new COVID-19 variant known as Omicron (B.1.1.529) and the COVID cases once again spiked. Nations with omicron were added to the list of "At Risk Countries" on November 25 2021 and states were recommended to boost sampling and genome sequencing of international travellers from those countries.

The symptoms initially observed in patients were loss of smell, loss of taste, cough, cold, fever and breathlessness. Runny nose, headache and fatigue were the common omicron symptoms^[11] many were still asymptomatic.^[12]

On January 16 2021, India began its vaccination drive for population of 18 years and above using the AstraZeneca vaccine (Covishield) and the indigenous Covaxin. Sputnik V and the Moderna vaccine were later approved for emergency use as well.^[13] Children between the ages of 15 and 18 began receiving the covid-19 vaccine on January 3 2022, and the precautionary dose (third dose of covid-19 vaccine) began on January 10, 2022.^[14] The objective of this study is to explore and understand the socio-demographic and the clinical characteristics of third wave of the patients admitted in tertiary care hospital of

Ahmedabad, Gujarat.

METHODOLOGY

This was a record based cross-sectional study conducted at the tertiary hospital (1200 bed) civil hospital Ahmedabad, Gujarat, India. This institute serve as a referral centre for a significant proportion of Gujarat and neighbouring states. We included all patients admitted from 01/01/2022 to 31/01/2022 and patients' details were collected from hospital's electronic database after obtaining permission from institutional head. The demographic details such as age, sex, comorbidity status, vaccination status, covid status, hospital stays, vital parameters like oxygen saturation at presentation and outcome parameter in term of discharge and death were collected retrospectively at end of the study period. The primary outcomes include admission to intensive care unit (ICU) and discharge rates. Data was entered and analysed using MS Excel-2019 & SPSS 26.

RESULTS

A total of 427 patients were admitted in civil hospital Ahmedabad in January 2022. It was observed from the study that more patients are from the age group of above 60 years and the mean age was 49.4 years. There is almost an equal gender wise distribution. At the time of admission, 47.5% patients were covid positive. Admission from triage included 58.3% of the cases and rest were admitted from OPD. Majority of patients presented with Breathlessness (93.1%) followed by Cough & cold (64.5%). Almost 44.3% patients were fully vaccinated, 11% were partially vaccinated, 30.7% were unvaccinated while vaccination status was unavailable for 14.1% patients. Around 40% patients had at least one comorbidity while 18% of them had more than one co-morbidity. Hypertension (61%) and Diabetes mellitus (41.9%) were the most common type of comorbid condition. The GCS scoring was done in patient admitted from triage wherein 80.32% patient had mild GCS score and 18.07% had severe GCS score.

Table 1 Demographic and clinical parameters of indoor patients.

Variable	Total n (%)
Age (n= 427)	
<=18 Years	55 (12.9%)
19-45 Years	106 (24.8%)
46-60 Years	100 (23.4%)
>60 Years	166 (38.9%)
Sex (n= 427)	
Female	184 (43.1%)
Male	243 (56.9%)
Covid status at admission (n= 427)	
Covid positive	203 (47.5%)

Covid negative	6 (1.4%)
Covid suspect	218 (51.1%)
Mode of admission (n= 427)	
From Triage	249 (58.3%)
From OPD	178 (41.7%)
Symptoms (n= 250) *	
Asymptomatic	2
Symptomatic	248
Breathlessness	231 (93.1%)
Cough Cold	160 (64.5%)
Fever	134 (54%)
Weakness	72 (29%)
Headache	36 (14.5%)
Other	31 (12.5%)
Altered sensorium	21 (8.5%)
Vomiting	11 (4.4%)
Abdominal pain	6 (2.4%)
Sore throat	3 (1.2%)
Duration of symptoms (n=250)	
0-24hrs	8(3.2%)
1-2 days	106 (42.4%)
3-5 days	97 (38.8%)
5-10 days	31 (12.4%)
>10 days	6 (2.4%)
Asymptomatic	2 (0.8%)
Vaccination status	
Fully vaccinated	189 (44.3%)
Partially vaccinated	47 (11%)
Not vaccinated	131 (30.7%)
Not available	60 (14.1%)
Comorbidity status	
No comorbidity	255 (59.7%)
Any comorbidity	172 (40.3%)
≥2 comorbidity	79 (18.5%)
HTN	105 (61.0%)
DM	72 (41.9%)
Cardiac comorbidity	31 (18.0%)
Asthma/ COPD	30 (17.4%)
CKD	21 (12.2%)
Hypothyroidism	9 (5.2%)
Malignancy	7 (4.1%)
Koch	7 (4.1%)
Liver Comorbidity	6 (3.5%)
Other	6 (3.5%)
Duration of Hospital stay	
<24 hr	63 (14.8%)
24 – 72 hrs	129 (30.2%)
3 – 5 days	84 (19.7%)
5 – 10 days	120 (28.1%)
>10 days	31 (7.3%)
Patients' status on admission	
Stable	170 (39.8%)
O2	125 (29.3%)
Mechanical ventilation	132 (30.9%)
GCS Score (n=249)	
Mild	200 (80.32%)
Moderate	4 (1.61%)
Severe	45 (18.07%)

*As the patients were brought directly from the triage, some of the details were difficult to obtain.

Table 2 Duration of stay in the hospital and distribution of it on basis of age group

Duration of stay	<24 hrs (%)	24-72 hrs (%)	3-5 days (%)	5-10 days (%)	>10days (%)	X2=9.325
<=18yrs	8 (12.7%)	2 (6.4%)	16 (12.4%)	14 (16.7%)	15 (12.5%)	P value >0.05
19-45 yrs	15 (23.8%)	4 (13.0%)	33 (25.6%)	18 (21.4%)	36 (30.0%)	
46-60 yrs	17 (27.0%)	7 (22.6%)	30 (23.3%)	20 (23.8%)	26 (21.7%)	

>60 yrs	23 (36.5%)	18 (58.1%)	50 (38.8%)	32 (38.1%)	43 (35.8%)	
Total	63 (14.7%)	31 (7.3%)	129 (30.2%)	84 (19.7%)	120 (28.1%)	

Here there is no statistical association between the duration of stay and age group distribution.

Table3 Distribution of Comorbidity status, Type of admission and Mode of ventilation at time of admission to Duration of stay

	<24 hrs (%)	24-72 hrs (%)	3-5 days (%)	5-10 days (%)	>10days (%)	Total (%)	
No Comorbidity	39 (15.3%)	83 (32.5%)	50 (19.6%)	73 (28.6%)	10 (3.9%)	255 (100%)	X2= 11.05, df=4 N=427 p= .026
Comorbidity Present	24 (14.0%)	46 (26.7%)	34 (19.8%)	47 (27.3%)	21 (12.2%)	172 (100%)	
Admission from OPD	24 (13.5%)	62 (34.9%)	39 (22%)	47 (26.5%)	6 (3.4%)	178 (100%)	X2= 9.942, df=4 N=427 p= .041
Admission from Triage	39 (15.7%)	67 (27%)	45 (18.1%)	73 (29.4%)	25 (10.1%)	249 (100%)	
Mechanical Ventilation	32 (24.3%)	29 (22%)	25 (19%)	39 (29.6%)	7 (5.4%)	132 (100%)	X2= 32.53, df=8 N=427 p= <.0001
O2	8 (6.4%)	43 (34.4%)	21 (16.8%)	35 (28%)	18 (14.4%)	125 (100%)	
On Air	23 (13.6%)	57 (33.6%)	38 (22.4%)	46 (27.1%)	6 (3.6%)	170 (100%)	

Patients with no comorbidity tends to spend less time in hospital as compared to those with comorbidity. Duration of stay is more in patients admitted from triage than patients admitted from OPD.

DISCUSSION

In the month of January 2022, we came across a new variant, which caused a sudden steep arise in the number of Covid cases. The majority of patients admitted were from urban residential areas, which may be pertain to the hospital's location. 38% of patient were from above 60 years which implies that one of the main reasons for the admission is comorbidity of the admitted patient in which 64% of them had one or more comorbidity. In our study we found that median age was 56 years (IQR: 31-68) with almost equal gender wise distribution. Similar findings were reported in the study by Jiangua Zhang et al^[15] and in another south African study^[16].

Among the admitted patients from triage, 80% of them had mild GCS score and 57% of the patient were discharged from the hospital. It was reported that Omicron variant leads to 15-80% of reduced risk of hospitalizations as compared to delta variant. It was evident that the third wave illness saw significantly fewer hospital admission and deaths than past waves.^[17]

Although vaccination program had started a year back before third wave but we still found that only 44.3% were fully vaccinated and 30.7% were unvaccinated. One of the predisposing causes could be unwillingness/ vaccine hesitancy, some minor vaccine side effect or decreased awareness about the Covid vaccination importance.

Most common presenting complaints were breathlessness (93.1%), cough-cold (64.5%), and fever (54%) whereas most common presenting complaints in first and second wave were fever, shortness of breath and dry cough^[18]. Number of cases in age group 60-year (38.9%) higher in 3rd wave as compared to 1st and 2nd (32.5% and 27.8% respectively) wave of covid 19.^[18] The discharge rate among age group of <18 years was 92%, which was higher than the age group above 60 years. As the cases were on rise during this period, all patients who were having similar symptoms and history of contact were admitted.

We need to further examine those individuals because this was our tertiary centre and many cases were referred in serious condition. We have compared the severity or impact of the third wave with the second wave because information about the third wave was not yet available.

CONCLUSION

COVID-19 is veiled in a world of uncertainties. the study concludes that the patients with any comorbidity and those admitted from triage have longer hospital stay. Also, patients having any comorbidity have a higher odd of admission by triage.

Despite of unquestionable progress, the new variants of the virus are still appearing and some issues remain unresolved, like the potential for recurrent infection, the virus's potential persistence and ability to infect a variety of cell types and cause complications outside of the respiratory tract, and the lack of SARS-CoV-2-strain specific therapeutics and vaccines.

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