Research Article

Impact of lockdown on non-COVID-19 patients

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Received: November 03, 2020; **Accepted:** December 01, 2020

ABSTRACT

Background: Severe acute respiratory syndrome coronavirus 2 pandemic gripped many nations and lockdowns were declared to limit its spread. During those harrowing lockdown times what happened to non-COVID patients has not been answered yet. **Objectives:** In the present study, the authors have tried to study the impact of lockdown on the non-COVID patients. **Materials and Methods:** It was a retrospective study conducted in a tertiary care institute. The impact of lockdown (March 24, 2020–May 31, 2020) on number of patients visiting outpatient department (OPD), admission, and deaths of non-COVID patients due to medical causes in wards of internal medicine and emergency was studied and compared with the corresponding period in 2019 (March 24, 2019–May 31, 2019). **Results:** OPD numbers plummeted from 14,050 in 2019 to just 3916 during lockdown a reduction of 258.78%. The total admissions appreciated from 887 in 2019 to 959 during lockdown 2020 an increase of 8.11%. The rate of admission substantially surged from 6.31% in 2019 to 24.48% in lockdown. Death rate witnessed a marginal increase from 2.36% in 2019 to 3.64% during lockdown. Mortality from renal causes increased substantially from two cases in 2019 to 10 in lockdown an increase of 400%. **Conclusion:** The research points out that during lockdown times OPD numbers plummeted significantly and admission rate of non-COVID patients showed an upward trend. A slight insignificant increase of in hospital mortality rate of non-COVID patients was also noted. These observations point out that non-COVID patients received due medical care during lockdown 2020.

KEY WORDS: Severe Acute Respiratory Syndrome Coronavirus 2; Lockdown; Non-COVID

INTRODUCTION

Coronaviruses (CoV) are a large family of viruses that cause illness ranging from common cold to more severe diseases. In late December 2019, Wuhan city in Hubei province of China started witnessing cases of severe pneumonia of unknown cause. This pneumonia was linked to new variant of coronavirus. A novel CoV (nCoV) was identified on January 7, 2020 and was temporarily named "2019-nCoV." On January 30, 2020, the World Health Organization declared that COVID-19 is a "public-health emergency of international concern." On February 11, 2020, this virus was named as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).[1] This disease was declared as pandemic on March 11, 2020.[1]

Access this article online	
Website: http://www.ijmsph.com	Quick Response code
DOI: 10.5455/ijmsph.2020.11172202001122020	

The Government of India confirmed first case of SARS-CoV-2 disease in country on January 30, 2020 in the state of Kerala when a university student from Wuhan travelled back to the state.[2] Indian Government acted swiftly to prevent the spread of SARS-CoV-2 and announced nationwide complete lockdown.

On March 24, 2020, the Government of India ordered a nationwide lockdown for 21 days, limiting movement of the

entire 1.3 billion population of India as a preventive measure against the COVID-19 pandemic in India.[3] As the end of the first lockdown period approached, state governments and other advisory committees recommended extending the lockdown.[4] On April 14, the nationwide lockdown was extended until May 3, with conditional relaxations after 20 April for the regions where the spread had been contained or was minimal.[5] On May 1, the Government of India extended the nationwide lockdown further by 2 weeks until May 17, and it was further extended till May 31 by the National Disaster Management Authority.[6]

Throughout this lockdown period, medical services were exempted from restrictions, but patients had difficulty due to complete absence of public transport and severe restrictions on movement of private vehicles. On May 30, unlock 1 was announced till June 30 with services resuming in a phased manner.[7]

As India was focusing largely on responding to the threat from COVID-19, what happened to the non-COVID patients with serious ailments is a big question? As many medical establishments were converted into dedicated COVID centers, outpatient department (OPD) and non-emergency services were stopped in several hospitals. We have studied the effect of lockdown on OPD numbers, admission, and death rate of non-COVID patients in the wards of internal medicine and emergency. On reviewing the literature, no concrete research was found on this topic.

MATERIALS AND METHODS

This was a retrospective study conducted in the department of internal medicine at a tertiary care institute in north India. The aim was to know the effect of lockdown (March 24, 2020–May 31, 2020) on following parameters:

1. Number of patients visiting OPD of internal medicine
2. Admission of non-COVID patients in internal medicine wards
3. Death of non-COVID patients due to medical causes in wards of internal medicine and emergency.

The inclusion criteria were as follows:

1. All the patients who attended the OPD of internal medicine
2. Patients who were admitted in wards of internal medicine
3. Patients who died of non-COVID causes in wards of internal medicine wards and emergency.

Exclusion criteria were as under:

1. Patients who tested positive for SARS-CoV-2
2. Age <18 years.

All the data were compared with the corresponding period in previous year, that is, March 24, 2019–May 31, 2019. The study was approved by the Institutional Ethics Committee. The statistical analysis was done using SPSS version 21 software. Throughout this manuscript 2019 represents period from March 24, 2019 to May 31, 2019 and 2020 represents the lockdown period (March 24, 2020–May 31, 2020).

RESULTS

The outpatient numbers showed drastic fall from 14050 in 2019 to just 3916 during lockdown 2020. It was a decrease of 258.78% with a statistically significant difference ($P = 0.03$) [Table 1].

The total admissions during lockdown period increased to 959 from 887 in 2019. So despite the lockdown, which severely limited the mobility of people, there was 8.11% increase in total admissions though it is not statistically significant.

Table 1: Comparison of outpatient department, indoor admissions, and death between 2019 and lockdown period

Variable	2019 (March 24–May 31)	2020 (March 24–May 31)	*P* value
Outpatient department (n)	14,050	3916	0.03[a]
Indoor admissions(n)	887	959	0.4[a]
Admission rate	6.31%	24.48%	<0.0001[b]
Sex (M/F)	462/425	609/350	<0.0001[b]
In hospital deaths	21	35	0.2[a]
Sex (M/F)	12/9	16/19	0.4[b]
Death rate	2.36%	3.64%	
Cause of death			
Cardiac	13	12	0.3[a]
Central nervous system	1	5	0.33[a]
Respiratory	3	2	0.4[a]
Renal	2	10	0.01[a]
Others	2	6	0.06[a]

[a]Unpaired *t*-test, [b]Chi-square test

The admission rate during 2019 was 6.31% and during lockdown it substantially increased to 24.48%; this difference is highly statistically significant with $P < 0.0001$ [Table 1].

The death rate during the lockdown period and previous year was also compared and showed a marginal increase from 21 deaths in 2019 to 35 deaths during lockdown. The death rate in 2019 was 2.36% and during the lockdown period, it was 3.64%.

In the lockdown period, there were 12 deaths due to cardiac, five deaths due to central nervous system (CNS), two due to respiratory, ten due to renal, and six due to other causes. In the corresponding period in 2019, there were 13, 1, 3, 2, and 2 due to cardiac, CNS, respiratory, renal, and other causes, respectively.

Deaths due to renal causes in the study period in the year 2019 were two, whereas, in lockdown period in 2020, it increased to ten which amounts to 400% increase. This increase in deaths due to renal causes during lockdown period was statistically significant when compared with corresponding period in previous year with $P = 0.01$ [Table 1].

DISCUSSION

As due to lockdown, the mobility was restricted to a great extent, the number of patients attending OPD of Internal Medicine plummeted by 258.78%. The surprising finding in the present study was that despite restrictions on movement, the total admissions in internal medicine and emergency wards increased from 887 in 2019 to 959 during the lockdown period in 2020. The admission rate skyrocketed from 6.31% in 2019 to 24.48% during lockdown 2020. The in-hospital mortality rate increased marginally from 2.36% in 2019 to 3.64% during lockdown 2020. Another unusual finding was that the deaths due to renal causes increased from 2 in 2019 to 10 in 2020. This amounts to an increase of 400% over previous year.

There are few studies[8,9] at present, which describe the effect of lockdown in various countries on the patients not suffering from SARS-CoV-2 infection. In study conducted by Rizzi *et al*.,[8] the admission rate fell by 50.7% (from 1406 patients in 2019 to 693 patients in 2020) and the in-hospital mortality rate nearly doubled from 7.68% in 2019 to 13.00% in 2020 which is contrary to the present research.

The decrease in OPD numbers can be easily attributed to lockdown restrictions and fear of SARS-Cov-2 infection among the population, whereas increase in the admission rate can be linked to the closure of medical facilities at other places in vicinity due to their conversion into SARS-CoV-2 management centers. Our institution was open for non-COVID patients. Another factor could be closure of most of health facilities in private sector. The increase in death of renal patients can be due to lack of adequate hemodialysis as many dialysis centers were closed during lockdown.

In the present study, the authors have tried to make an in-depth analysis on the effect of lockdown on non-COVID patients. The study has a large population size and results of over 2 months period were compared. As all the indoor patients were not subjected to reverse transcriptase-polymerase chain reaction for SARS-CoV-2, this will act as limitation of this study.

The lockdown had a drastic impact on the mobility of general public. Due to these restrictions, non-COVID patients had difficulty in getting access to medical facilities. Interstate and interdistrict movements were prohibited and intracity and intratown movements were greatly reduced. These restrictions impacted the movement of patients. Although some studies[8-10] have pointed out reduced number of admissions during lockdown, our study to the contrary recorded increased admissions. Although our in hospital mortality rate also increased, it was far less than as reported by other authors.[8]

CONCLUSION

The present study was focused on the impact of lockdown on non-COVID patients. The results of this research point out that OPD numbers decreased drastically and admission rate of non-COVID patients surged substantially during lockdown. Although the death rate increased marginally, it was not statistically significant. All these findings validate the point that during lockdown, sick non-COVID patients approached the facility which was admitting them. Fortunately our institute was one of those and we are of the view that non-COVID patients were not neglected during lockdown at least in our part of world!

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How to cite this article: Chander S, Gargi G, Saini A, Chauhan R. Impact of lock down on non-COVID-19 patients. Int J Med Sci Public Health 2020;9(10):580-583.

Source of Support: Nil, **Conflicts of Interest:** None declared.