

Original Research Article

Impact of COVID-19 on the patient visits in ortho emergency at a tertiary care centre

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Received: 09 November 2020

Revised: 11 December 2020

Accepted: 14 December 2020

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ABSTRACT

Background: COVID-19 pandemic effects are still being elucidated. Stay-at-home orders issued during peak of COVID-19 and social distancing as lockdown measures compounded with COVID-19 concerns have caused significant disruptions in daily life. One notable effect of these variables may be a change in the number of emergency department (ED) visits. This study aims to investigate the effects of COVID-19 on ED visits, and possible reasons for changes.

Methods: Retrospective analysis using data for ED visits and procedures performed in the orthopaedics department of GMC Jammu were collected from the record section of GMC Jammu for four months prior and post implementation of lockdown and results were deduced with regards to the comparison in the number of visits, admissions and surgeries done pre and post-lockdown period.

Results: The mean number of ED visits/admissions per day for the last four months of available data post lockdown due to COVID-19 pandemic was significantly less than the four months prior to COVID-19 pandemic.

Conclusions: A number of factors have likely contributed to the substantial decrease in ED visits observed in this study. In light of these findings, it is important to raise patient awareness regarding conditions that require urgent ortho consultation so as to avoid any type of deformity/disability whatsoever.

Keywords: COVID-19 pandemic, Emergency department visits, Road traffic accidents

INTRODUCTION

Since being declared a pandemic by the World Health Organization on March 11, 2020 coronavirus disease (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has spread rapidly causing significant suffering worldwide.¹ In India alone there were over 50,000 reported cases and over 1000 reported deaths as of 1st week of August, 2020.² In addition to the physical effects of COVID-19, the disease has also challenged the psychological resilience of many individuals and altered behavioral patterns. For instance, a study, which surveyed the Chinese public (from

January 31, 2020 to February 2, 2020), found that 54% of respondents rated the psychological impact of the COVID-19 pandemic as moderate or severe. Another study which surveyed the German public (from March 19, 2020-March 23, 2020) found that 28.2% of respondents were afraid of being infected by COVID-19.^{3,4} The fear that the public is experiencing due to COVID-19 is likely exacerbated by measures causing social isolation including quarantines, stay-at-home orders, travel restrictions and closures of non-essential businesses.^{4,5} As people practice social distancing, self-isolation, and begin working remotely, the potential for injuries such as trauma due to Road Traffic Accidents

(RTAs) may decline considerably. Given the potential reduction in injury, and the current climate of COVID-19 related fears, patients may be less likely to utilize hospital emergency department (ED) services. More worryingly, patients require urgent ortho care are also fearing to report to the tertiary care centre.

Thus, the primary objective of this study is to investigate the impact that COVID-19 may have had on ED visits nationwide. Additionally, this study aims to discuss potential reasons for any changes in the number of ED visits during the COVID-19 pandemic.

METHODS

This retrospective study was carried out by utilizing data from the record section of Govt Medical College & Hospital, Jammu for total emergency visits in Ortho department from December 19 to Augusts 20, 2020. The data was collected and descriptive statistical analysis was performed to assess the temporal trends in total number of emergency visits during pre and post-lockdown period.

The data collected was stratified under following sections to assess the changes in trends both before and after lockdown.

- Total number of admissions
- Patients who underwent major surgical procedure
- Age
- Referrals.

The ethical clearance for the study was obtained from the institutional ethical committee. All statistical analyses were performed using GraphPad Prism version 8.2.1.

RESULTS

Trends in change in visits in ED

The mean visits per day in emergency prior to lockdown was 187 ± 3.055 which dropped significantly to 43.85 ± 6.786 in post lockdown period. The below is a line diagram to represent the changing trends in ED visits (Figure 1). The per week average visits have been taken as reference to make the interpretation of chart less cumbersome.

The changes as depicted in the chart are clearly visible. As the disease intensified in India the number of patients visiting ortho emergency dropped significantly while slowly as the curbs were lifted the number reporting to the emergency also increased.

Admissions

The total number of admissions also saw a major drop. The number was reduced from a mean of 17.428 ± 4.117 per day to a 4.714 ± 1.224 mere per day. The line diagram

given below again represents that the no. of admissions have fallen significantly since implementation of lockdown ,however, they also have seen an increase since restrictions have been lifted (Figure 2).

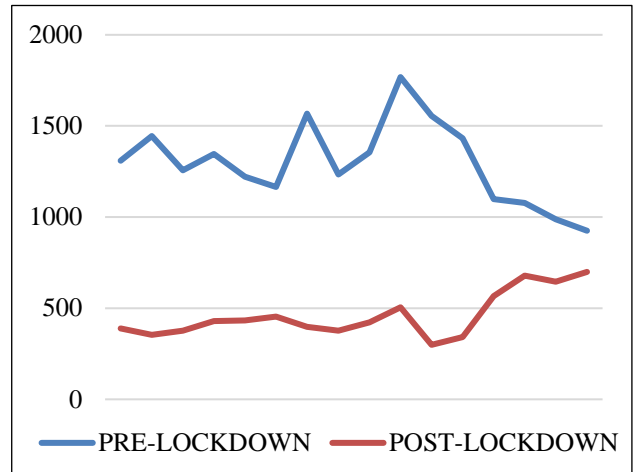


Figure 1: Trends in change in ED visits.

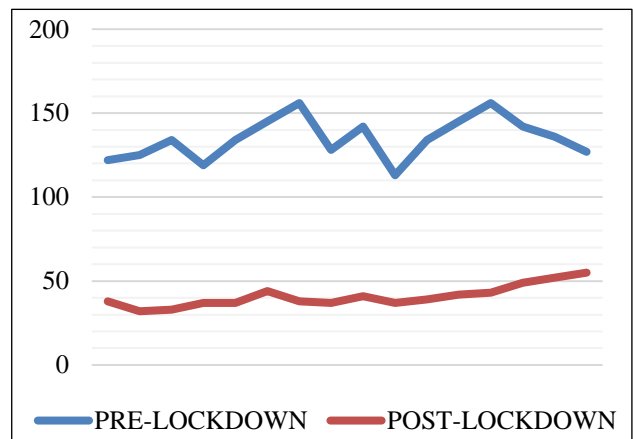


Figure 2: Changes in number of admissions.

Major surgical interventions

The no. of major surgical interventions falled from 10.875 ± 2.035 to 3.571 ± 1.272 (Figure 3). Again, for information of the reader it is pertinent to mention that though the values are calculated on daily (24-hr) basis, the line charts are marked on values which are weekly based so as to make the interpretation of the diagram much easier and clear for the reader.

Age

The trends with respect to the age of population reporting to emergency is summarized in Table 1. As evident above, the patients at extremes of population showed a decrease in percentage out of the total number of patients reporting to ortho emergency.

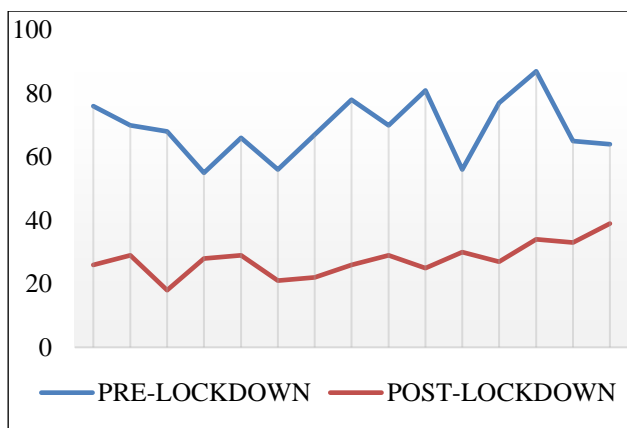


Figure 3: Changing trends W.R.T surgical interventions.

Table 1: Trends in changes in ED visits W.R.T age.

Age (in years)	Pre-covid (%)	Post-covid (%)
<18	33	12
18-60	47	72
>60	20	16

Number of referred cases received

The referred cases received were stratified on data basis into two groups; one which are referred from within a radius of 60km and other group which consisted of referrals from areas which are beyond the radius of 60km (Table 2). In pre-covid era more percentage of referrals were received from areas within a radius of 60kms, however, in post-covid era almost equal number of referrals were received.

Table 2: Changes in trends of referrals pre-covid VS post-covid.

Area	Pre-covid (%)	Post-covid (%)
<60 km	65-70	50
>60 km	30-35	50

DISCUSSION

As the number of COVID-19 cases increased gradually¹ in months of March and thereafter, the number of visits in ortho emergency started seeing a decline after and even more precipitously once the lockdown was implemented. The ratio of patients visiting emergency for minor ailments prior to lockdown dropped the most. This was supported by various international studies showing similar trends.⁶ This reflects the fear of contracting disease amongst the general population.

The number of admissions also declined considerably. This was mainly relatable to the fact that due to restrictions the major cause of orthopaedic admissions which was Road Traffic Accidents (RTAs) were

decreased manifold and this is demonstrated in a study done by Reddy et al.⁷ The patients referred from peripheries also decreased considerably. This again is attributable to the fear of people to come to GMC Jammu because of GMC being made a dedicated covid management centre.

The time post-covid also saw a general tendency amongst the clan of orthopaedic surgeons to revert back to old methods of managing fractures by conservative means shown in various studies and also due to guidelines established by IOA and this led to a significant decline of major surgical interventions during this period.^{8,9} The change in trends with respect to age also showed that the patient at extremes of age (comparatively low immunity) had a greater percentage wise fall in visits than patients of middle age groups.

The limitations of study include under reporting of cases during the pre-covid times. Moreover, the cases of polytrauma which were managed and admitted under general surgery at initial visit to the hospital and later shifted to ortho for ortho related specific management were not included in the study.

CONCLUSION

The patient visit in emergency department of orthopaedics of GMC Jammu has fallen significantly since COVID-19 has been declared a pandemic by WHO and also after implementation of lockdown. Many factors as discussed above have a role to play in this decline in no. of ED visits. However, it must be addressed that awareness should be raised amongst patients requiring immediate and urgent ortho intervention (cauda equina and other ortho emergencies) to report to nearest available medial facility and appropriate care/treatment must be taken to avoid any type of disabilities/morbidities or any other complications thereafter.

Funding: No funding sources

Conflict of interest: None declared

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

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Cite this article as: Choudhary N, Gupta A, Gupta S, Saharan A. Impact of COVID-19 on the patient visits in ortho emergency at a tertiary care centre. *Int J Res Med Sci* 2021;9:192-5.