ORIGINAL RESEARCH PAPER
Volume - 10 | Issue - 01 | January - 2021 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

# PROFILE OF EMERGENCIES IN DEPARTMENT OF MEDICINE DURING COVID 19 AND COMPARISON WITH NON COVID PERIOD- WHAT HAS CHANGED ?

General Medicine

**Dr Tarun Sharma** Assistant Professor Internal Medicine Dr RKGMC Hamirpur HP .

**Dr Anurag Thakur** Senior Resident Internal Medicine Dr RKGMC Hamirpur HP.

**Dr Aradhna Sharma*** Assistant Professor Pharmacology Dr RKGMC Hamirpur HP.*Corresponding Author

**Dr Anuradha Sood** Associate Professor Microbiology Dr RPGMCH Kangra at Tanda HP

## ABSTRACT

COVID has engulfed the word like a evil in the movies. All countries in the world are fighting this pandemic in their own ways. It has caused a large number of causalities and given a tough time to even developed countries and shattered economies of whole world. After this we have come to know how prepared we are for any catastrophic disease and what interdependency means. Stay-at-home orders and social distancing 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 and profile of emergency department visits. We have forgotten that other diseases such as communicable and non-communicable have not vanished. The need for chronic disease management and prevention does not disappear during a pandemic. These are still present and people are still coming to emergencies for treatment.

- We planned a study elaborately showing the change in emergency profile of patients during COVID and non COVID duration in India in a semi urban area in a new medical college.

## KEYWORDS

COVID, medical emergencies, non COVID deaths, lockdown.

## INTRODUCTION:

COVID has taken world by surprise. All countries in the world are fighting with this pandemic as per there resources. The world is currently impacted by the novel coronavirus disease(COVID-19). The World Health Organisation (WHO) coordinates the global efforts to manage the impacts and it declared COVID-19 as a global pandemic on March 11, 2020 [1]. The scale of the impacts is un precedented, and studies have suggested that it might take more than a decade for the world to recover, societally and economically [2] The pandemic started in the city of Wuhan, Hubei province, China and has brought many new challenges to public health in various countries. The world has experienced global public health crises in the last20 years caused by novel virus infections, such as HIV, Influenza A virus subtype H1N1, Influenza A virus subtype H5N1, SARS-CoV1, MERS-CoV, and Ebola. However, the epidemiological novelty of COVID-19, which caused by a strain of coronavirus (the SARS-CoV2), revealed our lack of preparedness given its sudden and rapid spread that caught many governments around the world unprepared. Further, in cities, the underprivileged population routinely utilizes the low-cost health services provided by the local practitioners and rural-based medical college hospitals. Suspended transport facility, closure of private practices, and classifying rural-based medical college hospitals as a red category, in particular, might have affected the health of the person with chronic medical conditions requiring meticulous monitoring. One study from France stated a decrease in 26% of all emergency department visits during the lockdown, which comprises a decrease of 34% of strokes, 32% of transient ischemic attacks, 36% of seizures, 64% of unstable angina, and 42% of appendicitis.[3] It is known that regular follow-ups are imperative for the patients and have a pivotal role in keeping their wellbeing. Government of India declared full lockdown in India on 25 march 2020 to fight against this pandemic of COVID. During lockdown period only emergency services are allowed and population is advised to maintain social distancing and stay at home. All essential items are like milk, vegetables are home delivered. During this period routine OPD's are hampered and only those patients who require emergency care present to hospital. A study in 2010 found that the patients who were hospitalized and discharged for heart failure from hospitals with higher early follow-up rates had a lower risk of 30-day readmission.[4] as such impact of loss to follow-up has not been studied yet. We planned a study to find out what change has this lockdown done to profile of these patients who present to emergency department and also to analyse deaths during lockdown and non-lockdown periods. The focus of every government and hospitals has now shifted to COVID care because of which a lot of patients suffered and thus causing collateral damage. To our knowledge no such study comparing emergencies has been done elsewhere in India. . This may not be a true picture since the institution where this study has been done caters to a very small population of around 10 lakhs.

## MATERIAL AND METHODS:

This was a retrospective comparative observational study conducted in Department of Medicine Dr Radhakrishnan Government Medical College Hamirpur Himachal Pradesh. This a new medical college running MBBS courses for last three years. It is located in plateaus of Shivalik region of Himalayas. Total number of emergencies coming to Department of Medicine were included in the study. Files of all patients presenting in Medicine emergency were studied and diagnosis of all patients was recorded. Patients were studied under headings of cardiovascular disease, sepsis, respiratory disease, neurological disease, or abdominal disease and death from any cause. Deaths were again subdivided into deaths during transportation and death in hospital. Data was collected for lockdown period of COVID for month of April (1/04/2020 to 30/4/2020) and month of January( 1/1/2020 to 31/04/2020) which was a non COVID non lockdown period. All patients were managed as per set protocols of respective disease and the patients requiring further care were referred to higher institutions. Patients brought dead were subjected to post mortem to ascertain cause of death. Police was informed and medicolegal formalities done for patients presenting with alleged history of poisonings.

## STATISTICAL ANALYSIS:

Data was collected for months of January when there was no lockdown and no COVID and April when there was full lockdown and COVID scare. Data was analysed using simple statistical tools of mean, mode median. Data was represented as percentages of total.

## RESULTS:

Records of all patients who presented in department of Emergency medicine with various complaints were analysed. Total number of emergencies in COVID and non COVID period were 369 and 372 respectively. Table 1 shows categorisation of patients for both lockdown and non-lockdown periods. The patients were further subcategorised system wise in order to achieve diagnosis after relevant investigations (Table 4). The category compromising others were further classified in diagnosis and were represented in percentages for both COVID and non COVID periods. During lockdown period there were a total of 28 deaths and 18 death during non-lockdown period (Table 2).. These were 8% of the total emergency admissions in lockdown and 5% during non-lockdown periods. 21(75%) deaths occurred in hospital and 7(25%) were brought dead during lockdown and 14(78%) were in hospital deaths and 4 (22%) were brought dead during non-lockdown period.

**Table 1 showing patient number with various system involvement.**

| S No | System involved | COVID Period n=369 Series 1 | Non COVID n= 372 Series 2 |
|---|---|---|---|
| | | Number of patients | Number of patients |
| 1 | Cardiovascular | 48 ( 12%) | 55 ( 16%) |
| 2 | Neurological | 37 ( 10%) | 39 ( 10%) |
| 3 | Respiratory | 34 ( 9%) | 44 ( 12%) |
| 4 | Abdominal | 50 ( 13%) | 42 ( 11%) |
| 5 | Renal | 39 ( 11%) | 49 ( 13%) |
| 6 | Malignancies | 6 ( 2%) | 5 ( 1%) |
| 7 | Others | 99 ( 27%) | 106 ( 28%) |
| 8 | Poisonings | 10 ( 3%) | 12 ( 3%) |
| 9 | Bites snake/ insect | 18 ( 5%) | 2 ( 1%) |

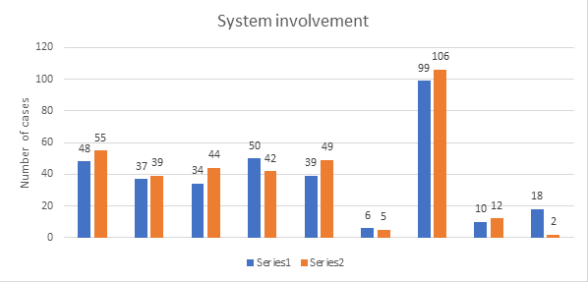


**Table 2 Showing details of death.**

| S. No | Deaths | COVID Period n = 369 Series 1 | | Non COVID n =372 Series 2 | |
|---|---|---|---|---|---|
| | | Number of patients | Percent | Number of patients | Percent |
| 1 | Total | 28 | 8% | 18 | 5% |
| 2 | Death in hospital | 21 | 75% | 14 | 78% |
| 3 | Brought dead | 7 | 25% | 4 | 22% |

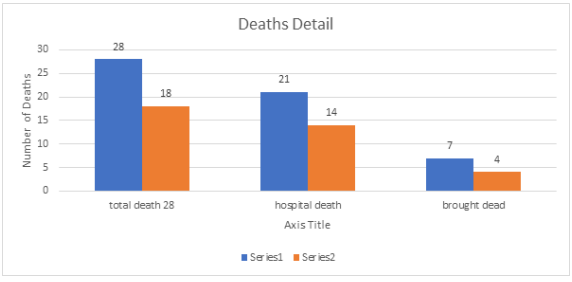


**Table 3 Sub classification of others category n=99**

| S No | Others category | COVID Period n=99 Series 1 | | Non COVID n=106 Series 2 | |
|---|---|---|---|---|---|
| | Sub class | Number of patients | Percent | Number of patients | Percent |
| 1 | Pyrexia | 13 | 12% | 10 | 9% |
| 2 | HIV with complication | 3 | 3% | 1 | 1% |
| 3 | Diabetes with complication | 27 | 26% | 26 | 25% |
| 4 | DVT | 6 | 6% | 8 | 7% |
| 5 | Severe Anaemia | 21 | 21% | 25 | 24% |
| 6 | Sepsis with septic shock | 16 | 15% | 13 | 12% |
| 7 | Symptomatic Dyselectrolytemia | 14 | 14% | 23 | 22% |

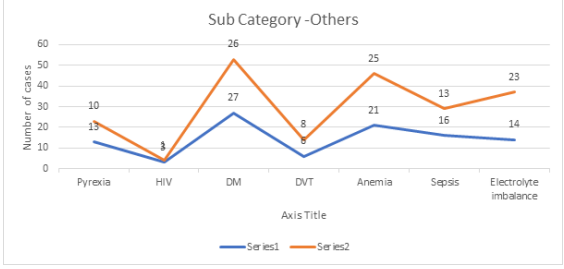


**Table 4 sub classification of system wise cause**

| S No | Subclassification | COVID | Percentage | Pre COVID | Percentage |
|---|---|---|---|---|---|
| 1 | Cardiovascular | 48 | 14% | 55 | 16% |
| | • STEMI ($T^+$) | 8 | 17% | 10 | 18% |
| | • STEMI ($T^0$) | 4 | 8% | 2 | 3% |
| | • NSTEMI | 15 | 31% | 18 | 33% |
| | • USA | 10 | 21% | 12 | 22% |
| | • ADHF | 7 | 15% | 8 | 15% |
| | • Cardiogenic shock | 4 | 8% | 5 | 9% |
| 2 | Neurology | 37 | 32% | 39 | |
| | • Stroke (H) | 12 | | 10 | 26% |
| | • Stroke (I) | 16 | 43% | 21 | 54% |
| | • Seizure | | | 8 | 20% |
| | • HPP | 6 | 16% | 0 | 0% |
| | | 3 | 8% | | |
| 3 | Respiratory | 34 | 56% | 44 | |
| | • COPD | 19 | | 24 | 55% |
| | • Pneumonia | | 26% | 11 | 25% |
| | • ILD | 9 | 18% | 9 | 20% |
| | | 6 | | | |
| 4 | Abdominal | 50 | | 42 | |
| | • Acute pancreatitis | | 18% | | 29% |
| | • UGIB | 9 | 20% | 12 | 29% |
| | • AVH | 10 | 12% | 12 | 4% |
| | • AGE | 6 | 30% | 2 | 16% |
| | • CLD | 15 | 20% | 8 | 19% |
| | | 10 | | 8 | |
| 5 | Renal | 39 | | | 49 |
| | • AKI | 14 | 36% | 15 | 30% |
| | • CKD | | 44% | 21 | 43% |
| | • UTI | 17 | 20% | 13 | 27% |
| | | 8 | | | |
| 6 | Insect bites | 18 | | | 2 |
| | • Snake | 6 | 33% | 0 | 0 % |
| | • Insect | 12 | 67% | 2 | 100% |

**Abbreviation's -** STEMI- ST elevated myocardial infarction, NSTEMI- non ST elevated myocardial infarction, USA- unstable angina, $T^+$ - Thrombolysed, $T^0$- not thrombolysed, ADHF- acute decompensated heart failure, Stroke (H)- haemorrhagic, Stroke (I) – infarct, HPP- hypokalemic periodic paralysis, COPD- chronic obstructive pulmonary disease, ILD- interstitial lung disease, UGIB- upper gastrointestinal bleed, AVH- acute viral hepatitis, AGE- acute gastroenteritis, CLD- chronic liver disease, AKI- acute kidney injury, CKD- chronic kidney disease, UTI- urinary tract infection.

## DISCUSSION:

- Results showed that total number of medical emergencies in both lockdown and non-lockdown periods were almost similar.
- There were more deaths in COVID period than non COVID period. (8% and 5% respectively).

On delineating deaths it was seen that death in hospital after admission were less for COVID than non COVID period but the number of patients who were brought dead were more in COVID period. This may be attributed to fact that people were lost to follow up during lockdown as well as they could not anticipate the seriousness of diseases as it was difficult to get first aid. There was definitely more collateral damage seen in various systemic diseases. There were less patients who presented with cardiac symptoms in COVID period possibly due to failure to recognise symptoms. STEMI thrombolysis rate was almost equal for both periods but the patients who presented with STEMI were thrombolysed less in COVID period may be due to delay in identifying symptoms or delay in arranging transport to hospital. In neurology patients having haemorrhagic stroke were more in COVID period possibly due to poor compliance of antihypertensive medicines due to poor availability and patients were not on regular follow up. The fact that ischemic stroke was more in non COVID period will need further studies and explanation. Hypokalaemic periodic paralysis was definitely more in COVID period possibly due to non-availability of potassium rich foods. COPD was less in COVID period that could be explained in view of significantly less pollution. Acute pancreatitis was significantly more in non COVID period and less in COVID period mainly due to closure of all alcohol shops since alcohol is the most common cause of pancreatitis in this

region. Insect bites were significantly more in COVID period since there is revival of flora and fauna after COVID and trespassing of all types of wild animals have been seen in various human dwellings. One more factor that could be suggested for all these differences is fear of general population of contacting corona in hospital settings. Delays in surgical and medical procedures has led to delayed diagnoses of, and ultimately deaths from, unmanaged chronic and preventable diseases. This has started occurring as shown in this study. That number of emergencies has almost remained same suggests that other medical conditions have not disappeared. These delays can overburden health systems when this lockdown will be over. In the midst of a pandemic, we cannot and should not abandon chronic disease management or disease prevention. Confidence building measures are needed to be taken from government end. Patients have to be given a message not to ignore emergencies and call for immediate help through various modes like telemedicine, toll free numbers, helpline numbers or through 108 services in India particularly. Also that patients or attendants may be taught to monitor basic vitals such as sugars or blood pressure using various automatic devices such as automatic blood pressure systems so that patient attendants may become more judicious and respond better to condition of patient. A study titled " COVID-19 pandemic: impact of lockdown and hospital classification on neurological patients" by Amandeep Singh et all had the same conclusion.[5] This is the time for ingenuity, because failure to prevent and manage chronic medical conditions will lead to other public health crises long after lockdown for COVID-19 is over. Corona crisis will remain for long time to come till we have a effective drug or vaccine. This article is a small data to show it has started its effect.

- What it has not touched is planned surgeries which were cancelled because of COVID.
- We were not able to point out what Emergency department should change in their practice to effectively save themselves from risk of COVID.
- Thirdly total number of deaths caused due to non COVID emergencies ort deaths caused due to want of first aid, want of ambulance and transport, morbidity caused due to COVID. Further large studies are needed which may tell at large what damage has been done after we get out of corona pandemic.

## CONCLUSION:

Any pandemic causes a lot of collateral damage due to negligence of other medical conditions. The delay in seeking treatment could be due mainly to fear of corona and lack of transport during lockdown. In light of these findings, it is important to raise patient awareness regarding acute conditions (e.g., STEMI and stroke) that are deadlier than COVID-19 and require immediate medical intervention to ensure recovery. Patients should also be made aware of telehealth options for non-acute conditions but need to be encouraged to utilize ED services during an emergency. But people have to be reassured that hospital staff is always there to help these patients and government should try to build confidence in general population as well as awareness.

## REFERENCES:

1. WHO, 26 March 2020, Critical preparedness, readiness and response actions for COVID-19.
2. United Nations, 25 March 2020, Launch of global humanitarian response plan forCOVID-19.
3. Yuen KS, Ye ZW, Fung SY, Chan CP, Jin DY. SARS-CoV-2 and COVID-19: The most important research questions. Cell Biosci. 2020;10:40.
4. Hernandez AF, Greiner MA, Fonarow GC, Hammill BG, Heidenreich PA, Yancy CW, et al. Relationship between early physician follow-up and 30-day readmission among Medicare beneficiaries hospitalized for heart failure. JAMA. 2010;303(17):1716-22.
5. Singh A, Goyal N, Chouksey D, Telang K, Jain R, Sodani, A K. (2020). COVID-19 pandemic: impact of lockdown and hospital classification on neurological patients. International Journal of Community Medicine and Public Health. 7. 10.18203/2394-6040.ijcmph20203097.