IMPACT OF COVID-19 PANDEMIC ON THE GASTROENTEROLOGY PRACTICES IN A TERTIARY CARE HOSPITAL IN LAHORE

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ABSTRACT

Objective: To assess the impact of COVID-19 pandemic on the gastroenterology practices in a tertiary care hospital.

Study Design: A comparative cross-sectional study.

Place and Duration of Study: The study was conducted at Gastroenterology Department, Combined Military Hospital, Lahore, from Jan 2020 to Jun 2020.

Methodology: The departmental workload was recorded from before the pandemic was declared and during the pandemic. The number of procedures including upper GI endoscopies (OGD), Colonoscopies, and Endoscopic Retrograde Cholangiopancreato-graphy (ERCP) were recorded. The out-patient department and in-patient department patient load was also recorded for both time periods. Microsoft excel sheet and SPSS version 24 was used to perform data analysis.

Results: We performed 34 (11.07%) emergency and 273 (88.93%) elective endoscopic procedures before the pandemic was declared in March 2020 whereas, afterwards, the load significantly reduced to only 25 (32%) emergency and 53 (67.95%) elective procedures (p<0.001). In our study, we reported that the frequency of indoor admissions was reduced by 26.8% during the COVID-19 pandemic whereas, the total number of outdoor patients was also substantially reduced from 2096 (94.6%) in pre-pandemic period to a mere 350 (82.35%) admissions.

Conclusion: The patient load and frequency of procedures has both significantly reduced during the COVID-19 pandemic.

Keywords: COVID-19, Gastroenterology, Pandemic, Out-patient department.

INTRODUCTION

Last year in December, China's Wuhan saw a bunch of pneumonia cases of unknown origin[1]. After investigation a novel enveloped RNA beta-coronavirus has determined as the cause of the fore-mentioned issue[2]. This novel coronavirus belongs to a family of enveloped RNA viruses that has been largely disseminated amongst humans and other mammals, causing a plethora of clinical manifestations. Of those, the most prominent ones are respiratory, gastrointestinal, and neurological clinical and subclinical symptoms[3]. Initially, COVID-19 spread from China to Japan, South Korea, the United States and other Asian countries via international air travel[4]. In February, COVID-19 was declared as a public health emergency by the World Health Organization (WHO)[2]. By the time of March 2020 more than ten thousand cases had been detected and confirmed in seventy-two countries[5]. A number that continued to rise exponentially every single day. Having a high mortality index, COVID-19 has been declared as a world-wide emergency due to its high burden on deaths 23,720 (16%) across many different countries[6]. The impact of COVID-19 on the economy and healthcare is enormous as here, we described the results of our analysis of the gastroenterology department before and during COVID-19 at CMH Lahore.

METHODOLOGY

A comparative cross sectional study was conducted between 5th January 2020 to 3rd June 2020 at Gastroenterology Department, Combined Military Hospital, Lahore. The ethical clearance was obtained prior to the data collection and

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since patient's primary demographic data was not involved in the study, the Ethical Review Board waived the requirement for an approval. Ethical review Board Certificate no is 202/2020. Total number of emergency and elective endoscopies was recorded before the pandemic was declared in March, 2020 and during the pandemic. The data was retrieved of the last seventy five days for each time-period.

The frequency of Endoscopic Retrograde Cholangiopancreatography (ERCP) and colonoscopy was also measured for both time-periods. Similarly, the overall number of patients treated and managed every day in out-patients and in-patients department before COVID-19 pandemic and during the COVID-19 pandemic was also observed.

Microsoft Excel sheet and Statistical Package for Social Sciences (SPSS) version 24 was used to perform data analysis. The workload and number of patients before and during the pandemic were recorded as frequency and percentage and chi-square was used to establish statistical significance of the difference between the two groups. The *p*-value of less than 0.05 was considered as statistically significant.

RESULTS

We performed 34 (11.07%) emergency and 273 (88.93%) elective/scheduled endoscopies before the pandemic was declared in March 2020 whereas, afterwards, the load significantly reduced to only 25 (32%) emergency and 53 (67.95%) elective/scheduled procedures (p<0.0005) (table-I & fig-1).

As illustrated by the figure 2, the number of colonoscopies and ERCP performed before and during the COVID-19 pandemic did not differ significantly (p=0.360).

In our study, we reported that the frequency of outpatient visits was reduced by 26.8% during the COVID-19 pandemic whereas, the total number of admissions was also substantially reduced from 2096 (94.6%) in pre-pandemic period to a mere 350 (82.35%) admissions. Results were statistically significant with a *p*-value of <0.001.

DISCUSSION

The COVID-19 pandemic which started in late December 2019, in China, has proved to be one of the most catastrophic events for the 21st century. The pandemic has caused over 382,188 deaths in the last six months and has infected 6,477,966 people, worldwide[3]. COVID-19 disease which is caused by a highly infectious virus, Which can be transmitted through several modes: i) direct contact with the infected person, ii) respiratory droplets of an infected person, iii) animal source, iv) feces, and v) airborne. The virus has a reproductive number of almost 3, meaning that one confirmed case of COVID-19 generates 3 new cases[7,8].

As the COVID-19 pandemic rages on, hospitals are being overburdened and are

Table-I: Comparison of frequency of endoscopies before and during the pandemic.

Endoscopy	Pre COVID-19 Pandemic	During COVID-19 Pandemic	*p*-value
Emergency	34 (11.07%)	25 (32.05%)	<0.0005
Elective/normal	273 (88.93%)	53 (67.95%)	

Table-II: Comparison of frequency of other procedures before and during the pandemic.

Other Procedures	Pre COVID-19 Pandemic	During COVID-19 Pandemic	*p*-value
Colonoscopies	39 (86.7%)	28 (93.3%)	
Endoscopic Retrograde Cholangiopancreatography	6 (13.3%)	2 (6.7%)	0.360

Table-III: Comparison of 75 days workload in the inpatient department and outpatient department before and during the pandemic.

Patients Treated	Pre COVID-19 Pandemic	During COVID-19 Pandemic	*p*-value
In-patient department	130 (5.84%)	75 (17.65%)	<0.001
Out-patient department	2096 (94.16%)	350 (82.35%)	

running out of capacity even in resourceful countries like the United Kingdom, USA, and Italy[9]. In a developing country like Pakistan, the situation is much worse, so far 119,535 cases with 2,356 deaths have been reported throughout the Pakistan (as per ministry of health data on 11th June 2020). Moreover due to limited testing capability and improper data collection from community this figure may be misleading. A previous survey suggested more than 7 lac patients may be present in Lahore only and cases rising upto 1.2 million by the end of July.

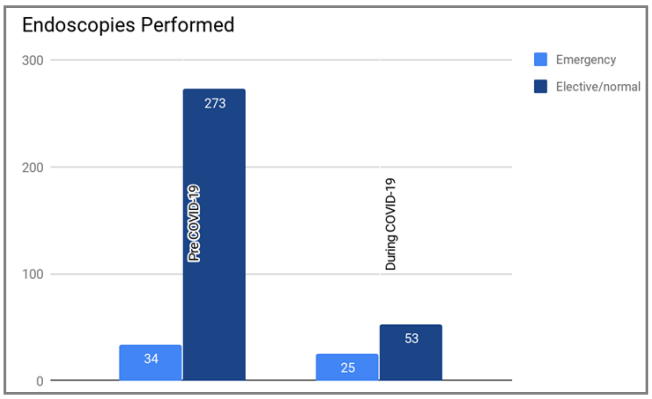

Figure-1: Graphical representation of endoscopies before and during the pandemic.

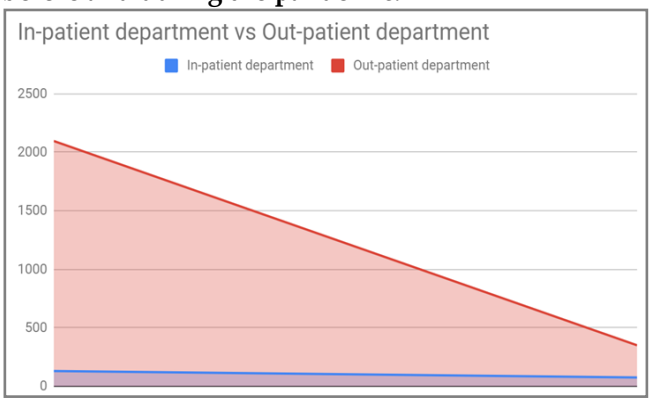

Figure-2: Graphical representation of patient load before and during the pandemic.

In short, the already burdened system of Pakistan health-care is continuously struggling to manage the rapidly increasing number of infected patients while at the same time, treating the emergency and the non-deferrable patients[10,11].

To avoid collapse of the health-care, the health-authorities in Pakistan have advised and agreed upon certain strategies to tackle the overgrowing burden of the pandemic and reorganize the departmental routine practices by rescheduling both surgical and outpatient department activities during the COVID-19 pandemic to avoid unnecessary exposure to both patients and the health-care workers[12]. We observed a sub-stantial decrease in the number of patients being treated and managed after COVID-19 outbreak was declared as pandemic. Not only the out-patient department activities were minimized, the elective and non-emergent cases were also rescheduled. The workload decreased significantly. A similar strategy has been implemented by countries in Europe, USA, amongst many others[13,14]. The Asian Pacific Society for Digestive Endoscopy (APSDE) recently published the guidelines on how to tackle the increasing burden on the health-care system. They advised to defer elective or non-emergent endoscopies during the COVID-19 pandemic[15]. Another reason to defer cases and reschedule the routine procedures is to minimize the exposure to the virus for both the practitioner and the patients. It is recommended to perform resource reallocation for staff and medical equipment to prepare for a surge in healthcare demand[16].

It seems unlikely that the current pandemic is going to subside anytime soon. The decreasing number of procedures during corona does not mean that other diseases have stopped to exist, it only shows a paradigm shift towards COVID-19, while epidemic shows no sign of ending especially in the setting of our vulnerable and thready economy and health care system, we need to adopt measures to provide best possible and safe GI services to the community in the current scenario. It is important that all health-care personnel should practice standard operating procedures and policies as directed by the health authorities and government for workplace and hospitals. It is the responsibility of the hospital administration to provide, as well as train their staff and employees on how to wear and remove the Personal protective equipment (PPE). Extra precaution is recommended during

colonoscopies as feces are a well-established source of transmission of virus, and prolonged faecal shedding of the virus can occur[16-18].

Gastroenterology work load has decreased significantly all over the world. Gastroenterology Staff in most hospitals have been deployed for care for COVID-19 Patients. Although local data for comparison is not available currently. In an article published in NEJM on impact of COVID-19 on North American Gastroenterology Practices revealed that endoscopy volume was <10% in 65% of centers and 97% centers had deferred screening colonoscopies[20]. Another article published in Digestive and Liver Disease Journal revealed data of 121 hospitals from all 20 Italian regions. Overall, 10.7% Gastroenterology units are converted to COVID-19 Units. Outpatients consultations, endoscopic and ultrasound procedures were limited to urgencies and oncology indications in 85.1%, 96.2% and 72.2% of Units, respectively, and 46.7% of them suspended the screening for colorectal cancer[21].

It is further advised that the endoscopies should take place in a negative pressure room if available, and in case of a probable or confirmed COVID-19 patient, strict isolation measures should be implemented. Disinfection process for endoscopy rooms and sanitization of instruments should be enhanced and preferably done both before and after every procedure[14,15,18,19]. Minimum number of endoscopy staff and doctors should be present. Use of proper personal protective equipment including N95 masks, gowns, gloves and face shields must be ensured. It is possible to resume the elective endoscopy services for the community if all precautionary measures are being taken into account and Standing Operating Procedures are being followed by all health-care practitioners and staff and according to the availability of workforce and equipment supply.

CONCLUSION

It is clearly established from our study that provision of GI services has been substantially reduced during the COVID-19 pandemic, what effects it will have on the long term morbidity and mortality of patients with GI problems is something that only time will unfold. Resumption of gastroenterology services should be considered for all OPD and in-ward patients as well as endoscopy, colonoscopy, and ERCP to ensure that the community has access to health-care. However, the hospital administration should ensure that their employees are provided with proper PPE and they strictly follow the standard operating procedures as directed by authorities to mitigate the spread of COVID-19 disease.

CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

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