

Therapeutic Endoscopy during COVID-19 Pandemic: An Observational Study from Bangladesh

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Coronavirus disease-2019 (COVID-19) is a new disease entity caused by novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). COVID-19 has been declared a pandemic by the World Health Organization (WHO).^{1,2} The disease started from Wuhan of Hubei province of China and then moved to Asia, Australia, Europe, and American continent, and Africa in a discrete manner.³ Bangladesh, a country of 170 million people first reported three cases of COVID-19 on 8 March, 2020, and the first COVID-19-related mortality was detected on 18 March, 2020.⁴ A nationwide enforcement of physical distancing was declared from March 26th, 2020, with closure of almost all functional avenues except the emergency entities. This lockdown approach has changed the overall life style of the people of the country. The social and economic impacts are tremendous on a developing country like Bangladesh, and more evaluation and analysis would be required to assess the mid- and long-term effects; the magnitude of which may not be assumed at this point as the country is still fighting to get rid of this pandemic.

The main objective of this letter to editor is to provide insights into the impacts and implications of COVID-19 epidemic in Bangladesh on healthcare delivery system, especially on the therapeutic endoscopy maneuver. COVID-19 has appeared as a double-edged sword in the context of progressive healthcare delivery approaches. It appeared in Bangladesh with a minimum notice and induced havoc among people as well as among health providers and policy makers as several emergency allocations were required.

Under these situation, the patients with chronic diseases such as diabetes mellitus, liver and heart diseases, and kidney pathologies could not maintain their regular follow-up due to lockdown status of the country and for fear of being infected by SARS-CoV-2. In fact, the aged people as well those with the preexisting pathologies are more susceptible to develop severe forms of COVID-19 resulting in increased mortality. Ultimately, discussion over mobile phone and social media replaced the very urgent need of doctor-patient direct encounter for advice and management of thousands of pathological conditions including acute diseases.

Although these approaches of telemedicine provided some excellent services,⁵ Hepatologists and Gastroenterologists of the country had a pressing need to accommodate their patients for general endoscopy and interventional/therapeutic endoscopy. Here, we provide a real-life situation scenario regarding traditional and interventional endoscopic procedures affected by COVID-19.

Our center of endoscopy being one of the busiest one in Bangladesh usually accomplished around 900 routine endoscopies per month. This was reduced drastically to 30 procedures in one

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month following execution of lockdown (from 26 March, 2020 to 26 April, 2020). In line of this, therapeutic endoscopy became 4% during lockdown period compared to their original level. Similar trend was detected in regard to therapeutic ERCP (Fig. 1).

The drastic decrease of endoscopic procedure is not a characteristic feature of Bangladesh only or our center only, but this has been found in Ganga Ram Postgraduate Institute of Medical Education and Research (GRIPMER), Delhi, India.⁶ In addition to the routine endoscopy procedure described above, there are important endoscopic procedures those are indicated for treatment of patients with serious and life-threatening pathologies. These include ligation of esophageal varices (EVL) and therapeutic endoscopic retrograde cholangiopancreatography (ERCP). These maneuvers are used for saving lives and/or making critical diagnosis of intractable diseases. Within the above period during lockdown, our team performed six EVL and five ERCP as shown in Table 1.

Now, everyone remains in a dilemma; should we proceed with accomplishing different Gastroenterologists procedures during pandemic of COVID-19 or we should wait for the normalization of situation. When human life is at stake and people with liver cirrhosis have been vomiting blood, EVL becomes necessary. At the same time, several professional associations have also issued special guidelines for performing endoscopic procedures during this ongoing pandemic and are discouraging routine endoscopic procedures,⁷⁻¹⁰ which recommend routine endoscopic procedures to resume after new COVID-19 cases have declined significantly in a given geographic location for two successive weeks. The guidelines also recommend prioritizing endoscopic procedures based on urgency by physician's professional judgment. In spite of different guidelines and recommendations, accomplishing procedures has been extremely limited due to various factors, such as, (1) inadequate manpower (health personnel) available to accomplish the procedures, (2) concern of cross infection (patient to doctor and health professional to patient), movement of health professional and patients, and (3) abiding social distancing recommendations.

For protection of the endoscopy personnel involved with the therapeutic endoscopy procedures, we used personal protective equipment (PPE) manufactured locally by our readymade garments industries. These are level 1 PPE, which fall short of the WHO standard.¹¹ However, in these difficult times of PPE shortage, this is the best that we had access to. We used N-95 8210 masks (3M, USA), hand gloves (WRP Asia Pacific Sdn Bhd, Malaysia), eye glasses (Walton High Tech. Ind. Ltd, Bangladesh), and eye shields (Walton High Tech. Ind. Ltd, Bangladesh) as part of the PPE. There was no provision of Hepafilter in our Endoscopy Suite. Several procedures were preferably performed on one day and the endoscopy

personnel and the patients, following discharge, were sent for home quarantine.

When we assessed the pathological status of six patients with EVL and five patients for ERCP (Table 1), the point of interest moves to the realities of developing country and humanity of medical professional, rather than existing safety criteria. Four out of five patients in whom therapeutic ERCP was done had cholangiocarcinoma, while the other patient had carcinoma gall bladder (Table 1). It is a matter of satisfaction that patient's lives were saved by different GI procedures during these emergencies of unknown characteristics.

Even with these compromised situations in Bangladesh, at the end of follow-up after 14 days, none of the patients had any COVID-19-like symptom. Their family members were also interviewed and none revealed any COVID-19-like symptom. A recent large study from Italy has made similar observations.¹² The study reports two large series of 851 patients and 968 healthcare workers (HCW) from Northern Italy. Five out of these 851 patients who were endoscoped developed COVID-19. Of the 968 HCWs who were involved in the endoscopy suites across 41 hospitals in the region, 4.3% tested positive and 0.6% needed hospitalization with a mean duration of hospital stay of 8 days, but none required ICU support. Interestingly, 85.7% HCWs who were positive for COVID-19 acquired the infection prior to the introduction of protective measures including PPE.

A major limitation of the study is that we could not do nasopharyngeal smear confirmation of the COVID-19 negativity of the patients and endoscopy personnel by polymerase chain reaction (PCR). However, these interventional approaches in GI facility may provide insights for other disciplines as to how the preparations for interventional approaches would be required during COVID-19 pandemic. The implication of the study is not limited to the field of Gastroenterology and Hepatology only. Rather, it has broad-based impact.

After years of motivation, there is an upward trend for hospital delivery in rural Bangladesh. COVID-19 will have negative impact on this trend as well as on proper functioning of the internationally acclaimed expanded programme of immunization (EPI) activity of Bangladesh.

As of today, it seems that COVID-19 is a seriously contagious disease with frequent mutations. A vaccine seems to be away, and even if a vaccine is found, it may not be of full satisfactory nature. Specific treatment for COVID-19 is not an option for the time being, and several drugs developed for other infectious diseases are being used for COVID-19; the utility and safety of these drugs are questionable. The present scenario indicates that we have to possibly have a co-existence with COVID-19 or some other forms of Coronavirus for longer times. The study reflects a situation that have been addressed to some extent, and proper planning and better execution would be required to have preparedness for COVID-19-like situations in developing countries.

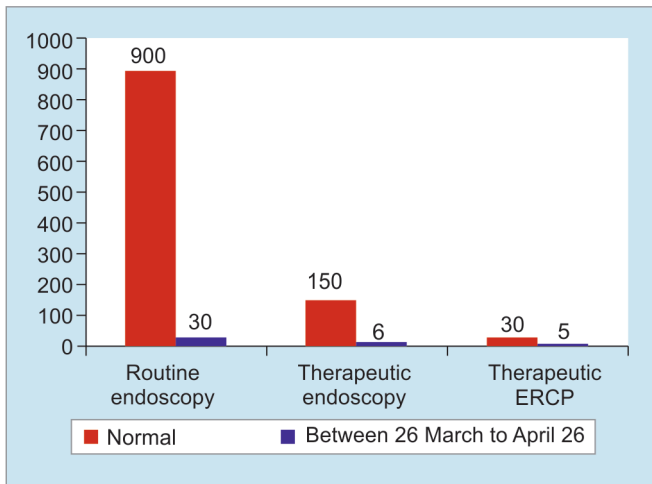


Fig. 1: Frequencies of routine endoscopy, therapeutic endoscopy, and therapeutic ERCP during normal time and during lockdown period (26 March–26 April, 2020)

Table 1: Type of endoscopy procedure and outcome

Total no.	Type of intervention	Diagnosis	Outcome of procedure	Age (years)	Gender (M:F)
6	EVL	Acute variceal hemorage	Hemostasis ensured	35–65	6:0
5	Therapeutic ERCP	Cholangiocarcinoma (4) carcinoma gallbladder (1)	Papillotomy and stenting done	43–67	4:2

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