Guidance and workflow of endoscopy reopening during COVID-19 pandemic

On March 19, 2020 the WHO declared coronavirus disease (COVID-19), caused by SARS-CoV-2, as a pandemic and it was crucial during the rapid spread of COVID-19 to postpone all elective and non-emergency endoscopic procedures.[1] In April 2020 the Saudi Gastroenterology Association published a position statement to guide gastroenterologists in Saudi Arabia on endoscopy services during the COVID-19 pandemic,[2] similar to other international societies worldwide.[3,4] The pandemic has led to a challenge for endoscopists as many urgent cases were deferred. In order to care for our patients, it was a must to resume endoscopic services gradually for those cases as soon as it is feasible with the least possible risk of exposing staff, patients, and healthcare providers. The decision of reopening ultimately depends on each endoscopy unit and the capacity of healthcare institution in terms of testing and tracing as well as staffing. The endoscopy unit at King Saud University Medical City (KSUMC) decided to start the process of reopening especially with substantial decrease in the number of COVID-19 cases requiring ventilators. A task-force was formed to provide a roadmap for safe reopening, which in turn could facilitate and guide other units towards restarting outpatient and routine procedures, with a phased approach based upon categories.[2] Nevertheless, the suggested protocol should be updated based on best available local public health information from the Ministry of Health.

The main purpose of this commentary is to present recommendations during the gradual reopening of endoscopy units, where indeed it is anticipated that readiness to resume endoscopic procedures will vary based on the status of each endoscopy unit and the guidance from the concerned health authorities. Our unit, which performs around 6000 procedures annually, had more than 800 requests pending since the start of the pandemic, with numerous inquiries from patients seeking information about the risk of infection or the precautions to be taken when attending the unit.

Currently, there are no formal evidence-based recommendations from clinical societies or healthcare authorities on resuming endoscopy procedures although, a few reports from international societies are emerging[5,6] highlighting the potential rearrangements of care and resetting of the endoscopy flow. During the preparation we faced multiple layers of complexity on the reopening scenario, however, this is a novel situation with limited options and we tried our best to keep the process simple and applicable. Table 1 shows the general information

Table 1: General Information for the endoscopy staff and patients prior to and on the day of the procedure

General Information:
This workflow is applicable for all outpatient and inpatient endoscopic procedures at KSUMC and all endoscopy staff must be familiar and appropriately follow the new workflow.
Given the current situation of the COVID-19 pandemic, the re-opening for outpatient endoscopic procedures will be carried out in phases (three phases).
Scheduling patients for endoscopic procedures should be prioritized as emergency (category A), urgent (category B) or elective (category C) [2].
Emergency cases will be performed without delay as inpatient procedures and If the patient is confirmed positive for COVID-19, procedures should be done in negative-pressure room with full Personal Protective Equipments (PPE)[1] {Respiratory PPE (N95 mask/PAPRs), two pairs of gloves, booties/shoe covers, disposable hairnet, protective eyewear (goggles or disposable face shield), and water-proof disposable coveralls}.
Risk stratification for patients who need urgent or electives cases will be performed by endoscopy nurse through a phone call 72 hours prior to the procedures using (MOH) COVID-19 screening score. If the patient has high score , he/she needs to call the helpline from MOH.
For low risk patients, please follow the re-opening plan and workflow attached and the procedures should be done in regular room with proper PPE {Surgical mask, gloves ,shoe covers, protective eyewear goggles or disposable face shield, and water-proof disposable gown}[1].
Checkpoints at the hospital entrance to screen the patients and ask if there has been any history of cough or fever within the preceding 3 days.
Respecting 1–2 m distance between chairs where patients sit waiting for the procedures.
Patients should be wearing masks at all times and no relatives are allowed to enter inside the endoscopy unit. For inpatients should be brought directly into the endoscopy room with a mask and once the procedure is done the patient will be shifted immediately back to the floor to limit exposure in the recovery areas.
Rooms must be cleaned in between the procedures which will increase the total procedure time.
Scopes cleaning will continue the same as prior the pandemic following the local hospital and infection control recommendations.
Biopsies will be taken only if needed and will be labeled as a biohazard sample for all cases and handled carefully as per protocol by endoscopy and lab staff.
Adequate number and different sizes of PPE should be available in the unit all the time and a request to maintain adequate supply for the PPE should be made to cover the unit's needs for a minimum of 8 weeks.

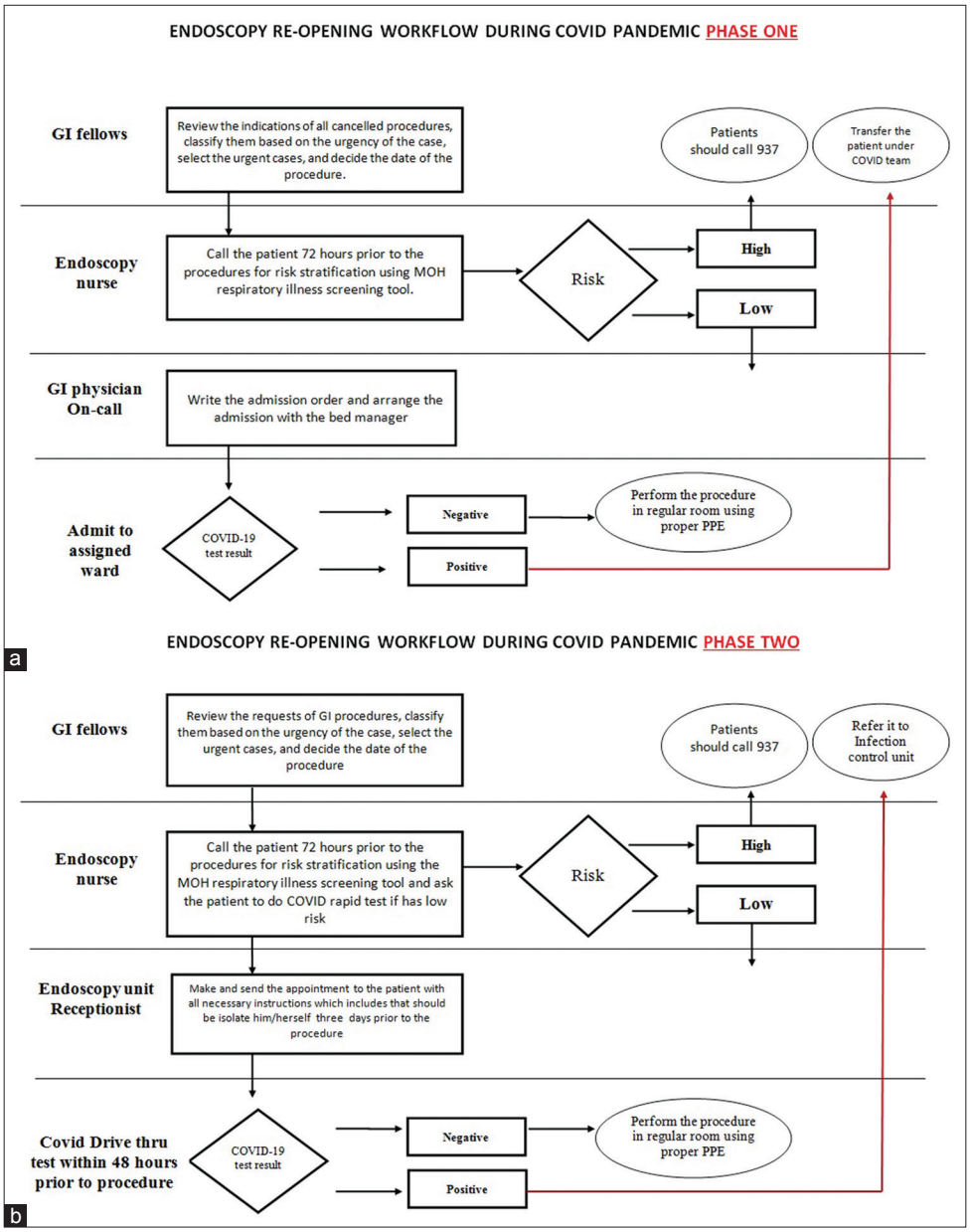

Figure 1: (a). Flowchart 1 demonstrate the specific steps for pre-procedure protocols for phase one. (b). Flowchart 2 demonstrate the specific steps for pre-procedure protocols for phase two

Table 2: Definition and workflow of the re-opening phases

Phase	Category	Indications	Action plans
ONE (EARLY RECOVARY) 20% OF TOTAL UNIT CAPACITY	A Emergency procedures	-Significant gastrointestinal bleeding -Caustic ingestions -Foreign body impaction -Cholangitis -Gastric leak or biliary leak -Volvulus -Luminal obstruction requiring stenting -Biliary obstruction requiring stenting -Infected pancreatic fluid collection	All patients will be admitted through emergency room (ER) in the COVID ward, nasal swab to be done if the result is negative the procedure will be done in a regular procedure room with proper PPE. If the result is positive, the procedure will done in negative pressure room with full PPE.

Contd...

Table 2: Contd...

Phase	Category	Indications	Action plans
	B Urgent Procedures	-Workup for iron deficiency anemia -Workup for weight loss -Slow gastrointestinal bleeding with a stable hemoglobin level -Symptomatic IBD patients, if procedure will change their management -Colonoscopies in patients after colon cancer resection with increasing CEA level or a positive CT scan -Diagnostic gastroscopy or colonoscopy for pain, heartburn, constipation with alarm symptoms -Dysphagia.	Patient should be admitted to assigned ward for nasal swab and the procedure will be done if the result is negative in regular room with proper PPE. If the result is positive the decision of performing the procedure should be individualized based on the case.
	C Elective procedures	-Screening colonoscopies for colorectal cancer -Screening gastroscopies for varices in cirrhotic patients -Colonoscopies after colon cancer resection with stable CEA level and a negative CT scan -History of previous adenomas in the gastrointestinal tract -Stable IBD patients to assess for mucosal healing/colon cancer. -Abdominal pain, constipation or heartburn with no alarm symptoms. -Motility procedures -Urea breath test	1. All elective procedures should be postponed
TWO (SLOW REOPENING) 50% OF TOTAL UNIT CAPACITY	A Emergency procedures	Same indication as phase one	Follow the same role as in phase one
	B Urgent Procedures	Same indications as phase one	The Patient should do the nasal swab using drive thru COVID rapid testing two days prior to the procedure. Patients with negative results only will be done in regular room with proper PPE. If the result is positive he/she will be referred to infection control department
	C Elective procedures	Same indications as phase one	1. All elective procedures should be postponed
THREE (POST-PANDEMIC) 100% capacity of Out-patients cases	B & C	All regular and therapeutic procedures	Back to normal and outpatients procedures will be carried out as per routine schedules

which addresses the staff's, patients, and caregivers, safety recommendations pre-procedure and on the day of the procedure. Scheduling the procedures was prioritized based on its urgency and the potential of serious outcomes if the procedure was delayed. The reopening was divided into three phases and Table 2 shows the details of each phase along with the workflow. A significant number of COVID-19 infections are being transmitted from asymptomatic individuals[7] thus requiring all patients to be tested for SARS-CoV-2 within 48-72 hours of a scheduled procedure. Flowcharts 1 and 2 demonstrate the specific steps for pre-procedure protocols for phases 1 and 2 respectively, and the role of individual endoscopy staff as shown in Figure 1a and b.

In conclusion, the COVID-19 pandemic will continue to be a burden on our healthcare systems. The decision to reopen endoscopy units should be taken based on the locally available resources respecting infection control recommendations. Finally reopening endoscopic activity should be made in phases with clear guidance for each phase.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Nahla Azzam, Nora Alotaibi, Majid Almadi, Abdulrahman Aljebreen

Division of Gastroenterology, Department of Medicine, College of Medicine, King Saud University Medical City, King Saud University, Riyadh, Saudi Arabia

Address for correspondence: Dr. Nahla Azzam, Division of Gastroenterology, Department of Medicine, College of Medicine, King Saud University Medical City, King Saud University, Riyadh- 12372, Saudi Arabia.
E-mail: nazzam@ksu.edu.sa

REFERENCES

1. Centers for Disease Control and Prevention Coronavirus Disease 2019. Available from: https://www.cdc.gov/coronavirus/2019-nCoV/index.html. [Last accessed on 2020 Jul 22].

2. Almadi MA, Aljebreen AM, Azzam N, Alammar N, Aljahdli ES, Alsohaibani FI, *et al*. COVID-19 and endoscopy services in intermediately affected countries: A position statement from the Saudi Gastroenterology Association. Saudi J Gastroenterol 2020;26:240-8.
3. Gralnek IM, Hassan C, Beilenhoff U, Antonelli G, Ebigbo A, Pellisè M, *et al*. ESGE and ESGENA position statement on gastrointestinal endoscopy and the COVID-19 pandemic. Endoscopy 2020;52:483-90.
4. Chiu PWY, Ng SC, Inoue H, Reddy DN, Ling Hu E, Cho JY, *et al*. Practice of endoscopy during COVID-19 pandemic: Position statements of the Asian Pacific Society for digestive endoscopy (APSDE-COVID statements).Gut 2020;69:991-6.
5. Ménard C, Waschke K, Tse F, Borgaonkar M, Forbes N, Barkun A, *et al*. COVID-19: Framework for the resumption of endoscopic activities from the Canadian Association of Gastroenterology. J Can Assoc Gastroenterol 2020;gwaa016. doi: https://doi.org/10.1093/jcag/gwaa016. [Lastaccessed on 2020 Jul 22].
6. Manes G, Repici A, Radaelli F, Bezzio C, Colombo M, Saibeni S. Planning phase two for endoscopic units in Northern Italy after the COVID-19 lockdown: An exit strategy with a lot of critical issues and a few opportunities. Dig Liver Dis 2020;52:823-8.
7. Lai CC, Liu YH, Wang CY, Wang YH, Hsueh SC, Yen MY, *et al*. Asymptomatic carrier state, acute respiratory disease, and pneumonia due to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2): Facts and myths. J Microbiol Immunol Infect 2020;53:404-12.

Access this article online

Quick Response Code:

Website: www.saudijgastro.com

DOI: 10.4103/sjg.SJG_425_20

How to cite this article: Azzam N, Alotaibi N, Almadi M, Aljebreen A. Guidance and workflow of endoscopy reopening during COVID pandemic. Saudi J Gastroenterol 2020;26:279-82.