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Indian Association of Gastrointestinal Endo Surgeons COVID-19 endoscopy recommendations

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Abstract These are recommendations from the Indian Association of Gastro Intestinal Endo Surgeons for safe performance of diagnostic and therapeutic endoscopy during the COVID-19 pandemic.

Keywords: COVID-19 pandemic, elective endoscopy, emergency endoscopy, endoscopy disinfection, flexible endoscopy, informed consent, practice guidelines

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INTRODUCTION

COVID-19 pandemic has brought the world to its knee with unimaginable economic, social and health-related issues. While government authorities are making all efforts to flatten the pandemic curve, every endoscopic surgeon should strive to save patients and also safeguard the welfare of fellow health-care professionals (HCPs) by formulating and adhering to strict safety guidelines.

SARS-CoV-2 virus is a highly infectious RNA virus transmitted by droplet infection.[1] We should realise that what we know so far about this dangerous virus is like a drop in the ocean. Hence, we need to be extra vigilant to protect the health of our patients and HCPs. With no possibility of definitive therapy or vaccine in future, we have to adapt strict institution-based infection prevention and control policy.

Basic and advanced endoscopic training programs are one of the key areas of academic activities by Indian Association of Gastrointestinal Endo Surgeons. Hence, it is our responsibility and need of the hour to formulate recommendations for the benefit of all practicing endoscopic surgeons. It is essentially based on opinion from experts and limited literature evidence. For ease of understanding and application, we have indicated the strength of recommendation and quality of literature evidence wherever it is possible.[2]

We should realise that these recommendations are time sensitive and are bound to change in case of additional evidence appearing in the near future with regard to investigation and management of COVID-19 infection.

Summary of current recommendations on endoscopy during COVID pandemic

1. We should stop all elective endoscopy work
2. Flexible endoscopy and therapeutic procedures are indicated only for clearly defined emergency and urgent cases
3. We should stop seeing and reviewing all routine non-urgent cases in endoscopy department. Tele-consultation could

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be considered to minimise unnecessary hospital visit by the patient and relatives
4. All patients coming to emergency endoscopy unit for any treatment should be asked to adhere to strict infection prevention and control measures namely social distancing, hand scrub, and appropriate mask
5. All personnel in the endoscopy room should wear N95 mask and personal protective equipment (PPE) during any endoscopic procedure
6. It is desirable to perform preoperative *real-time-polymerase chain reaction* (RT-PCR) test prior to all endoscopic procedures. Every emergency or urgent endoscopy patient should be presumed as COVID-19 suspect, irrespective of the test outcome
7. Comprehensive well-written informed consent form comprising all necessary details relevant to COVID-19 pandemic should be signed by the patient and relative prior to undergoing any endoscopic procedure
8. All emergency and urgent endoscopic procedures should preferably be done under general anaesthesia (GA) with careful endotracheal intubation
9. Endoscopy requires high-level disinfection. Endoscopic accessories should be either disposable or need reprocessing by means of proper sterilisation
10. All patients undergoing any endoscopic procedure should be followed up for 2 weeks to monitor their health status. HCP should report any COVID-19 symptoms and agree for self-quarantine, if needed.

1. Advice on performing elective endoscopy

We should stop all elective endoscopy work[2]

Strong recommendation, moderate certainty of evidence

Endoscopy is a high-level aerosol-producing procedure akin to endotracheal intubation. Due to proximity of the patient, infection could also spread by touch or conjunctival contamination. It is also possible to have faecal transmission during colonoscopy.

Elective cases are those where delaying an endoscopic procedure for 4–6 weeks is unlikely affect the final outcome. Evaluations of chronic anaemia, dyspepsia and achalasia are some examples. Most of the screening and surveillance endoscopic procedures could also be deferred for some time.

2. Advice on emergency and urgent endoscopy cases

Flexible endoscopy and therapeutic procedures are indicated only for clearly defined emergency and urgent cases[2]

Strong recommendation, low certainty of evidence

Emergency cases are defined as those needing endoscopic procedure within 24 h. Acute gastrointestinal bleeding and severe cholangitis with organ dysfunction are some classical examples.

Urgent cases are those requiring endoscopic procedure within 30 days. Otherwise, there is a likelihood of worsening of symptoms or progression of disease leading to poor outcome. Infected pancreatic fluid collection and obstructing left colon tumour are some common examples.

We have listed the course of action for various common clinical situations whether to perform the endoscopic procedure or postpone. All endoscopic surgeons should consider them as broad-based guidelines and hence advised to use his/her clinical discretion to make a definitive plan depending on the risk profile of individual patient [Tables 1-3].

3. Review of routine and non-urgent cases in endoscopy outpatient unit

We should stop seeing and reviewing all routine non-urgent cases in endoscopy department. Tele consultation could be considered to minimise unnecessary hospital visit by the patient.[3]

Conditional recommendation, low certainty of evidence

- We should also prevent unnecessary review of non-urgent cases to mitigate the possible spread of COVID-19 infection. In view of difficulty faced by the patients not able to receive medical attention and advice, the Medical Council of India has recently come out with guidelines to allow doctors for tele-consultation.[3]

4. Health advice for patients at endoscopy outpatient department[4]

All patients coming to emergency endoscopy unit for any treatment should be asked to adhere to strict infection prevention and control measures namely social distancing, hand scrub and appropriate mask.

Strong recommendation, moderate certainty of evidence

We should manage the appointments in such a way to avoid crowding in the waiting room. It is clearly shown that the chance of droplet infection could be significantly minimised if both the patients and all HCPs wear the masks and adhere to rigorous hand hygiene and social distancing.

Table 1: Recommendations for upper gastrointestinal endoscopy during coronavirus disease-2019 era

Indication	Index cases	Plan of action
Diagnostic endoscopy	Dyspepsia	Defer
	Acute or progressive dysphagia	Perform
	Acute upper GI bleeding	Perform
	Chronic anaemia	Defer
	Suspected upper GI malignancy	Discuss with MDT Consider CT abdomen
Surveillance endoscopy	Barrett's oesophagus	Defer
	Oesophageal varices	
Therapeutic endoscopy	FB oesophagus	Perform
	Acute variceal/ulcer bleeding	Perform
	ESD for submucosal lesion	Discuss with MDT and plan
	POEM for achalasia	Defer
	Stenting for leak following sleeve gastrectomy	Discuss and plan

GI: Gastrointestinal, ESD: Endoscopic submucosal dissection, POEM: Peroral endoscopic myotomy, MDT: Multidisciplinary team, CT: Computed tomography, FB: Foreign body

Table 2: Recommendations for colonoscopy: During coronavirus disease-2019 era

Indication	Index cases	Plan of action
Diagnostic colonoscopy	Bleeding PR	Defer colonoscopy Do PR/proctoscopy to exclude ano-rectal causes
	Constipation	Defer
	Bloody diarrhoea IBD	Perform
	Chronic anaemia	Defer
	? Colonic malignancy	Discuss with MDM Consider CT abdomen
Surveillance colonoscopy	Postpolypectomy/colectomy	Defer
	Long history of IBD	
Screening colonoscopy	Family history of colonic polyps/Ca	Defer
Therapeutic colonoscopy	Lower GI bleeding requiring snare polypectomy	Perform
	ESD for large rectal polyp	Discuss with MDM and plan

GI: Gastrointestinal, ESD: Endoscopic submucosal dissection, CT: Computed tomography, MDM: Multi disciplinary meeting, PR: Per rectal examination, IBD: Inflammatory bowel disease, CA: Carcinoma

Table 3: Recommendations for therapeutic endoscopic retrograde cholangio pancreatography and advanced endoscopic procedures during the coronavirus disease-2019 era

Index cases	Plan of action
Cholangitis/jaundice/severe sepsis	Perform
Gall stone pancreatitis with GB/CBD stone	Discuss/consider MRCP 1st
GB stones/small CBD stone with normal LFT	Defer and discuss with experts
Cholangio Ca with sepsis	Perform
Post cholecystectomy bile leak	Discuss with experts and plan
Pancreatic endotherapy	Defer
Spy glass cholangioscopy	Defer
EUS/guided intervention	
Pancreatic head mass? Ca	Discuss with experts and plan
Pancreatic fluid collection with sepsis	

CBD: Common bile duct, LFT: Liver function test, GB: Gallbladder, EUS: Endoscopic ultrasound, MRCP: Magnetic resonance cholangiopancreatography, Ca: Carcinoma

5. Advice on personal protection equipment for healthcare professionals[5-8]

All personnel in the endoscopy room should wear N95 mask and PPE during any endoscopic procedure.

Strong recommendation, moderate certainty of evidence

Various types of masks are described namely 3-ply surgical masks, N95 masks and powered purified air respirators. N95 mask ensures filtering of up to 95% of aerosol particles of >0.3 μ and widely recommended in several clinical situations. 3M P100 filter with high efficiency particulate air -grade 99% filter can also be useful.

PPE should be composed of hairnet, goggles, N95 masks, coverall, leggings, double gloves and protective face shield. We should look into the composition of each PPE and make sure that they are made up of good-quality non-woven and fluid-resistant material. Every HCP should learn proper donning and doffing method of PPE and also safe disposal of them.[6-8]

6. Management strategy for patients undergoing endoscopy[9]

It is desirable to perform preoperative RT-PCR test prior to all endoscopic procedures. Every emergency or urgent endoscopy patient should be presumed as COVID-19 suspect, irrespective of the test outcome.

Conditional recommendation, low certainty of evidence

Every patient waiting for endoscopy should be evaluated for any COVID-19-related symptoms, recent travel history and contact history with any family members or next-door neighbours diagnosed as COVID-19-positive cases. Accordingly, the patient is classified as low- and high-risk category. We should also realise that a significant percentage of patients remain asymptomatic in spite of COVID-19 infection. Before performing any endoscopic procedure, we should ideally carry out COVID-19 tests and plan accordingly. Hence, we should perform RT-PCR to know the infection status or consider doing rapid serology test to know the immune status prior to any endoscopic procedure. Till we get clear guidelines and facility to perform these tests, we should presume every patient as a COVID-19 suspect and manage accordingly. We should refer high-risk category patients and COVID-19-positive patients to COVID-19-designated hospital for further evaluation and treatment.

7. Importance of COVID-19 endoscopy consent form[10]

Comprehensive well-written informed consent form comprising all necessary details relevant to COVID-19 pandemic should be signed by the patient and relative prior to undergoing any endoscopic procedure.

Strong recommendation, moderate certainty of evidence

- In addition to the standard endoscopic consent form, we should also include the following points in the disclosure in view of COVID-19 pandemic, namely:
- Understands the urgency of endoscopic treatment essential for his/her own health benefit
- Understands about all efforts taken by the hospital authority to prevent any COVID-19 or other infection to the patient while admitted in the hospital
- The patient should be explained about the additional cost to be incurred during COVID-19 era endoscopy (PPE, GA, disinfection, turnaround delays, etc.)
- Information about the enhanced risk prior, during or after the procedure to get COVID-19 infection and also higher-than-usual risk of complications following any endoscopic therapy should be clearly explained to the patient prior to the procedure
- The patient should understand and agree that hospital/HCP will not be held responsible for any COVID-19 infection acquired by the patient.

A model consent form for endoscopy is given in Table 4.

8. Advice on endoscopy under anaesthesia[11]

All emergency and urgent endoscopic procedures should preferably be done under GA with careful endotracheal intubation.

Conditional recommendation, low certainty of evidence

All endoscopic procedures are high-level, aerosol-producing procedures with considerable risk of infection for every HCP. Hence, we should adopt a universal policy of GA for all cases, to reduce aerosol generation or retching. In addition to N95 mask and PPE, the healthcare team should also consider using a large plastic hood/sheet to cover the head end of the patient to avoid droplet infection during intubation. Endoscopy team should enter the room 15 min after induction of GA. The team should be comprised of an experienced endoscopic surgeon along with minimum number of knowledgeable HCP. We should avoid any trainee performing such emergency procedure to prevent undue delay. We should adhere to COVID-19 biomedical waste disposal protocol.

9. Cleaning and disinfection of endoscopy and endoscopy room during COVID-19 era[12-14]

Endoscopy requires high-level disinfection. Endoscopic accessories should be either disposable or need reprocessing by means of proper sterilisation.

Strong recommendation, moderate certainty of evidence

COVID-19 virus could be easily and effectively eliminated with our regular disinfection protocol. However, we should ensure that the HCP wears PPE during washing and disinfecting the endoscopic equipment. Automatic machine disinfection is preferable than manual disinfection. Dilute chlorine solution should be used to clean the endoscopy room, instrument cart, table and anaesthetic machine. A minimum interval of 30 min between the cases is needed to minimise the risk of aerosol infection.

10. Statement on follow-up of endoscopy patients and health status of healthcare professionals[15]

All patients undergoing any endoscopic procedure should be followed up for 2 weeks to monitor their health status. HCP should report any COVID-19 symptoms and agree for self-quarantine, if needed.

Conditional recommendation, low certainty of evidence

All the patients following endoscopic procedures should preferably be contacted by phone on day 7 and day 14 to ask for any COVID-19 symptoms or any other health issues. We should also routinely monitor the health of every HCP asking for any fever and other COVID-19 symptoms and take their temperature regularly. HCPs should go for self-quarantine in case of any doubt and seek immediate advice regarding COVID-19 testing.

By adapting the above-mentioned recommendations in our endoscopy practice during this COVID-19 era, we should be able to manage our patients well and also safeguard the health status of our staffs. We should be able to confront and conquer this COVID-19 crisis with compassion and common sense.

#Together we can.

Table 4: Additional informed consent form for gastrointestinal endoscopy in the coronavirus disease-2019 era

Hospital name	Date
Patient details	
Name of consultant	
Name of procedure	

Contd...

I,...……..……S/o ……...
from……..
Here by give my consent for the procedure:……Type of
anaesthesia:…… performed by Dr…… on ……
at……..hospital
I understand that in this period of COVID-19 pandemic, I have come to the hospital voluntarily for my emergency treatment
I understand that I could already be an asymptomatic carrier or infected by COVID-19 carrier, now without any manifestation of disease
I understand that all efforts are taken by the hospital and its staffs at all levels to prevent any cross infection to me
I also understand that the morbidity or complications related to procedure are higher in COVID-19-infected patients
I understand and fully agree that hospital/HCP won't be held responsible for any COVID-19 Infection acquired by me or any of accompanying people during my hospital stay or later
The incremental costs in the COVID-19 era have been explained to me and agree to the same
I have fully understood all the above-mentioned details, clearly explained to me by the doctor in my mother tongue. Hence, I fully agree and give this signed consent for the above mentioned procedure voluntarily

HCP: Healthcare personnel, COVID: Coronavirus disease

	Signature	Name	Date	Time
Patient				
Witness (relation with patient)				
Doctor				
Interpreter				

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Conflicts of interest
There are no conflicts of interest.

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Editor's comment

Since this paper related to COVID-19 is of topical interest, we have fast tracked it through the publication process. The knowledge in this field is evolving rapidly and continually. Some of the aspects mentioned in these guidelines may have become outdated and newer understanding may have emerged. The readers are therefore urged to refer to the most recent versions of the resources related to this topic.