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
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**[3]

*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

**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.
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 purifier air respirators. N95 mask ensures filtering of up to 95% of aerosol particles of >0.3 μm 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.[5–8]

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 neighbors diagnosed as COVID-19-positive cases. Accordingly, the patient is classified as low- and high-risk category. We should also realize 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

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

**Conditional recommendation, low certainty of evidence**

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

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

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

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

**Conditional recommendation, low certainty of evidence**

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.

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...
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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.