

Endoscopy in developing countries during COVID-19 pandemic and the emergence of Omicron variant.

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I. Introduction:

The WHO declared COVID-19 as pandemic on 11 March, 2020 with more than 550 million positive cases and 6.3 million deaths till July 2022¹. Gastrointestinal symptoms are not uncommon in this disease². The overall mortality was 1.4% and for those with severe disease the mortality was 22.4%.

Endoscopy is an aerosol generating procedure³, positive insufflation during endoscopic procedures poses a risk of generating aerosol and increase the risk of SARS-COV-2 transmission.

It has been confirmed that COVID-19 can be found in the oral cavity and faecal samples of infected individuals².

The Asia Pacific Society for Digestive Endoscopy (APSDE) gathered experts to develop a position paper on practice of endoscopy during COVID-19 pandemic with the objective of providing recommendations for endoscopy centres on management and prevention measures during COVID-19 pandemic.

This SOP, is based on the above recommendations⁴ with minor modifications because of regional needs.

The following protocol may be adopted in the Endoscopy units of the developing countries for the safety of the health personnel and the patients.

Triage

Strategies to triage and assess risk of patients with suspected or confirmed COVID-19 before endoscopy are essential.

WHO defines⁵:-

- a. A confirmed case of COVID-19 as a person with laboratory confirmation of COVID-19 infection, irrespective of clinical signs and symptoms.
- b. A probable case is defined as a suspected case for whom testing of COVID-19 is inconclusive.
- c. A suspected case is defined based on the 3 criteria.
 - 1) Patients with acute respiratory illness with no other aetiology and a history of travel to, resident in countries/states/regions reporting local transmission of COVID-19 during 14 days before symptoms onset.
 - 2) Patients with acute respiratory illness and who have been in contact with a confirmed or probable case of COVID-19 in the past 14 days before symptom onset.
 - 3) Patients with severe acute respiratory infection requiring hospitalization and with no other cause that fully explains the clinical presentation.

Protocol:

Before arrival to the endoscopy units all patients need to undergo pre-screening and the following information should be collected.

A: All patients referred for Endoscopy should be EVALUATED by a resident doctor of the concerned endoscopy unit for the following

B: Positive for Any of the following "FTOCC" should be clinically suspected case of COVID-19.

1. Fever of more than 37.5 C (F)
2. Travel history (T) recent travel in endemic zone
3. Occupational History (O) Health providers, Research laboratory staff
4. Contact history (C) contact with COVID-19 patients in the past 14 days
5. Clustering (C) Two or more COVID-19 patients with history of close contact

Testing for COVID-19 (SARS-CoV-2 Antigen-RDT) should be done before endoscopy in all FTOCC positive cases. If positive the HOSPITAL ADMINISTRATION should be informed and all necessary PRECAUTIONS SHOULD BE TAKEN AS PER HOSPITAL PROTOCOL.

If COVID-19 TEST is negative all the cases should be TRIAGED FOR ENDOSCOPY

C- TRIAGE FOR ENDOSCOPY

All the patients referred for ENDOSCOPY SHOULD BE CATEGORISED

- ELECTIVE ENDOSCOPY PROCEDURE
- URGENT ENDOSCOPY PROCEDURE
- SEMI-URGENT ENDOSCOPIC PROCEDURE

Elective endoscopy procedures

a-Routine endoscopy, surveillance and follow up endoscopy,

b-Therapeutic endoscopy for non-cancer disease,

c- ERCP for non-malignant conditions.

Deferment of all elective endoscopies should be considered until further notice.

Urgent endoscopies should be performed by strategically assigned staff:

What is urgent endoscopy?

- a. Acute GI bleeding
- b. Management of perforation and leakage
- c. Biliary sepsis
- d. Foreign body
- e. GI obstruction requiring stenting
- f. GI access for urgent feeding

Semi urgent endoscopy-

semi urgent endoscopies may be discussed with consultant endoscopist and taken up as case by case basis.

What is semi urgent endoscopy?

- a Endoscopic management for GI neoplasia
- b Endoscopy for highly suspicious cases of cancer
- c. Small bowel endoscopy for occult GI bleed
- d. ERCP for hepatobiliary cancers

D-The type of endoscopy procedures in relation to the PPE (Standard or enhanced) manpower and frequency of Gown down is shown in TABLE-1 should be adhered to

Procedure	Aerosol Generating Procedure	Standard PPE for non-suspected/ test negative cases	Enhanced PPE for high risk/ confirmed COVID-19	Endoscopist manpower	Endoscopy Nurses manpower	Frequency of gown down
Oesophagogastr odudendoscopy	YES	Surgical mask or N95 Blue isolation gown Gloves Standard endoscopy room	N95 Blue isolation gown Goggles or face shield	1 (at specialist level)	1	Mask: end of each session Gown: change when contaminated Gloves: after each case
Colonoscopy	YES	Surgical mask or N95 Blue isolation gown Gloves Standard endoscopy room	N95 Blue isolation gown Goggles or face shield	1 (at specialist level)	2	Mask: end of each session Gown: change when contaminated Gloves: after each case
ERCP	YES	Surgical mask or N95 Blue isolation gown Gloves Standard endoscopy room	N95 Blue isolation gown Goggles or face shield Negative pressure room (with enough space and X-ray shielding)	1 (at specialist level)	2	Mask: end of each session Gown: change when contaminated Gloves: after each case
Bronchoscopy	YES	N95 Blue isolation gown Goggles or face shield Negative pressure room	N95 Blue isolation gown Goggles or face shield Negative pressure room	1 (at specialist level)	1	Mask: end of each session Gown: change when contaminated Gloves: after each case

E-Endoscopy unit staff should place request for the PPEs with the HOSPITAL ADMINISTRATION and should have stock available for 2 weeks at the rate of 2 cases per day requiring minimum of six kits per day

F-After any case of POSITIVE COVID-19 UNDERGOING URGENT ENDOSCOPY, the whole endoscopy unit should be sanitized as per standard sanitization protocol of the HOSPITAL.

G-The Hospital administration should be informed about the case and where the patient is being managed post endoscopy.

II. Discussion

The emergence of the alpha, beta, and delta SARS-CoV-2 VoCs were associated with new waves of infections, sometimes across the entire world. On Nov 25, 2021, about 23 months since the first reported case of COVID-19 a new SARS-CoV-2 variant of concern (VoC), variant B.1.1.529 was reported. On 26 November 2021, WHO named it Omicron, on the advice of WHO's Technical Advisory Group on Virus Evolution (TAG-VE)⁶.

The COVID-19 pandemic has taken a heavy toll during the second wave. Endoscopy services have been greatly affected by the pandemic.

However, gradually with the opening of the lockdown and diminution of the cases, the endoscopic procedures have again started and in some places have reached the pre-pandemic level.

However, there is gradual decline in the level of protective measures and less adherence to the standard operating protocols.

With the signal of a new variant Omicron⁷ sweeping the world, it is high time that we learn from our past mistakes and start afresh and adhere to the SOPs for self-protection and the protection of the patients.

Though this variant (omicron) appears to be less lethal, but is more infective. Hence there is a risk of rapid spread of this infection which may result in another COVID wave. Hospitals adopting this protocol may be able to protect the spread of infection among hospital staff and patients coming for endoscopy.

We have adopted a protocol to allow endoscopic procedures in COVID RT-PCR negative patients, except in emergent cases.

References

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WHO COVID-19: Case Definitions

Updated in Public health surveillance for COVID-19, published 16 December 2020

Case Definitions

Suspected case of SARS-CoV-2 infection

A A person who meets the clinical **AND** epidemiological criteria:

Clinical Criteria:

- Acute onset of fever AND cough; OR
- Acute onset of **ANY THREE OR MORE** of the following signs or symptoms: Fever, cough, general weakness/fatigue¹, headache, myalgia, sore throat, coryza, dyspnoea, anorexia/nausea/vomiting¹, diarrhoea, altered mental status.

AND

Epidemiological Criteria:

- Residing or working in an **area with high risk of transmission of virus**: closed residential settings, humanitarian settings such as camp and camp-like settings for displaced persons; anytime within the 14 days prior to symptom onset; or
- Residing or travel to an **area with community transmission** anytime within the 14 days prior to symptom onset; or
- Working in **any health care setting**, including within health facilities or within the community; any time within the 14 days prior of symptom onset.

B A patient with **severe acute respiratory illness**: (SARI: acute respiratory infection with history of fever or measured fever of ≥ 38 C°; and cough; with onset within the last 10 days; and requires hospitalization).

C Asymptomatic person not meeting epidemiologic criteria with a **positive SARS-CoV-2 Antigen-RDT**²

¹ Signs separated with slash (/) are to be counted as one sign.
² NAAT is required for confirmation, see [Diagnostic testing for SARS-CoV-2](#)
 See [Antigen detection in the diagnosis of SARS-CoV-2 infection using rapid immunoassays](#)

Probable case of SARS-CoV-2 infection

A A patient who meets **clinical criteria** above **AND** is a **contact of a probable or confirmed case**, or linked to a **COVID-19 cluster**³

B A **suspect case with chest imaging** showing findings suggestive of COVID-19 disease⁴

C A person with recent onset of **anosmia** (loss of smell) or **ageusia** (loss of taste) in the absence of any other identified cause.

D **Death**, not otherwise explained, in an adult with **respiratory distress** preceding death **AND was a contact of a probable or confirmed case** or linked to a **COVID-19 cluster**³

Confirmed case of SARS-CoV-2 infection

A A person with a positive **Nucleic Acid Amplification Test (NAAT)**

B A person with a **positive SARS-CoV-2 Antigen-RDT** **AND** meeting either the **probable case definition** or **suspect criteria A OR B**

C An **asymptomatic person with a positive SARS-CoV-2 Antigen-RDT** who is a **contact of a probable or confirmed case**

³ A group of symptomatic individuals linked by time, geographic location and common exposures, containing at least **one NAAT-confirmed case** or at least **two epidemiologically linked, symptomatic** (meeting clinical criteria of Suspect case definition A or B) persons with **positive Ag-RDTs** (based on $\geq 97\%$ specificity of test and desired $>99.9\%$ probability of at least one positive result being a true positive)
⁴ Typical chest imaging findings suggestive of COVID-19 include the following:
 • **Chest radiography**: hazy opacities, often rounded in morphology, with peripheral and lower lung distribution
 • **Chest CT**: multiple bilateral ground glass opacities, often rounded in morphology, with peripheral and lower lung distribution
 • **Lung ultrasound**: thickened pleural lines, B lines (multifocal, discrete, or confluent), consolidative patterns with or without air bronchograms.

Note: Clinical and public health judgment should be used to determine the need for further investigation in patients who do not strictly meet the clinical or epidemiological criteria. Surveillance case definitions should not be used as the sole basis for guiding clinical management.

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