Gastrointestinal endoscopy during COVID-19 pandemic

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Performing gastrointestinal (GI) endoscopy during the current COVID-19 pandemic is challenging. The ease of transmission at close proximity, especially in the context of aerosol generating procedures (AGP), raises the spectre of inadvertent healthcare worker (HCW) exposure and infection during GI endoscopy procedures, with further transmission to other HCW and patients, causing a nosocomial outbreak. Appropriate systematic processes must be put in place to enhance the safety of both HCW and patients, and limited resources must be utilized in a rationale manner. Although the practice of evidence-based medicine is advocated, objective scientific data may be lacking initially, and a judgment call has to be made. Even when key principles of safe practice are adhered to, specific approaches must be contextualized to actual needs on the ground.

Several guidelines and position papers have been issued by various organizations to address the issue of safe GI endoscopy practice during the ongoing COVID-19 pandemic.[1-7] Although these guidelines have many similarities, subtle differences do exist. With further accumulation of scientific data, and evolution of the pandemic situation globally, further refinements would be needed. In this issue of JGH, Lui et al reviewed the available evidence for safe GI endoscopy practice, summarized the recommendations from available guidelines and position papers, and provided further guidance to enhance the safety of HCW and patients during endoscopy, and to promote rational use of personal protective equipment (PPE).[8] Some of the issues highlighted are very crucial for safe and efficient practice even when there is no pandemic, but have now assumed even greater importance and relevance, while others are measures specific to mitigating the risks of the current outbreak. Some of these issues will be further discussed.

A fundamental matter of utmost importance to all endoscopy centres is the need for harmonization of the actual physical design with optimized daily operational workflow. It is insufficient to just create a physical space per se. This is important for staff and patient safety, operational efficiency and ease of implementation of appropriate infection prevention and control measures. There must be proper patient cohorting before and after procedures, and a clear demarcation and separation of clean and contaminated zones with designated one-way passages for the transportation of used/contaminated equipment that is separate from clean or disinfected equipment to avoid cross-contamination. This is crucial during the current pandemic, but remains very important even after the resolution of the outbreak, and must be taken into account when planning new endoscopy units.

There is a need to strike a balance between focusing solely on emergency therapeutic GI endoscopy procedures and allowing limited elective procedures, based on resource availability, which is dynamic and will differ between geographic regions. Areas overwhelmed by the pandemic are on a war footing, and all electives would be cancelled with the available limited resources devoted to emergency therapeutic procedures. In regions where resources still permit limited elective procedures, assessment of the risk of disease transmission must performed prior to endoscopy. This is based mainly on screening questions of patient epidemiological and clinical factors, although ancillary tests have been used, and procedures have been classified as higher or lower risk for transmission. It must be remembered that epidemiological risk factors may change with time, as evident by the expanding list of countries categorized under high risk regions, to now essentially all travel abroad, as

indicated by country specific advisories that are being constantly updated. FTOCC (fever, travel, occupation, contact and clustering) must be standard components of a screening questionnaire prior to endoscopy. It should be realised that the definition of “contact” should be expanded to include not just contact with confirmed cases of COVID-19, but even close contact with individuals at higher risk of harbouring the infection, such as returning from overseas within the last 14 days and untested asymptomatic individuals who are self-isolating due to exposure, since there is a risk of transmission even at the pre-symptomatic phase. Elective procedures for these individuals should be deferred for at least 2 weeks.

The actual magnitude of the risk of GI endoscopy procedures causing disease transmission is unclear. Some guidelines have suggested that the use of surgical face masks in non-high risk GI endoscopy procedures would suffice with N95 masks being used for high risk procedures and high risk patients.[2,6] Procedures could conceivably be performed in pre-symptomatic undiagnosed patients as the disease spread in the community. It is prudent to wear full PPE, meaning N95 mask, eye protection with face shield or googles, water resistant gown and gloves routinely in all cases of GI endoscopy. For confirmed or suspected cases of COVID-19 infection needing emergency endoscopy, the use of powered, air-purifying respirator (PAPR) in addition to N95 mask will provide an additional safety barrier if it is available, and is currently practiced in Singapore. In China, PPE at biosafety level 3 is required during endoscopy. Good hand hygiene practice is fundamental. Although a case report of HCW exposed to an AGP for a COVID-19 patient suggested that surgical masks, hand hygiene, and other standard procedures were adequate, it could simply

be fortuitous, and given the uncertainly involved, and the potentially devastating impact, prudence should be exercised when resources permit.

There will be light at the end of this long tunnel. When the COVID-19 pandemic is finally over, it will be appropriate to relook at old and current necessity-driven practices. Even if certain infection prevention and control measures are scaled down, there will be fundamental changes in both physical and functional structures and personal practices that must remain, to deal with not just the prevalent risk of COVID-19 transmission, but other new entities that may emerge.

References

1. Endoscopy activity and COVID-19: BSG and JAG guidance. https://www.bsg.org.uk/covid-19-advice/endoscopy-activity-and-covid-19-bsg-and-jag-guidance/ (accessed 20 March 2020).
2. Repici A, Maselli R, Colombo M, Gabbiadini R, Spadaccini M, Anderloni A *et al.* Coronavirus (COVID-19) outbreak: what the department of endoscopy should know. *Gastrointest Endosc* 2020. doi:10.1016/j.gie.2020.03.019.
3. Joint GI Society Message on COVID-19. https://gi.org/2020/03/15/joint-gi-society-message-on-covid-19/ (accessed 21 March 2020).
4. SAGES Recommendations regarding surgical response to COVID-19 Crisis. https://www.sages.org/recommendations-surgical-response-covid-19/ (accessed 21 March 2020).
5. Considerations for Australian Endoscopy Units During the COVID-19 Pandemic. 2020. https://www.gesa.org.au/resources/covid-19. (accessed 21 March 2020).

6. COVID-19: Advice from the Canadian Association of Gastroenterology for Endoscopy Facilities, as of March 16, 2020. https://www.cag-acg.org. (accessed 21 March 2020).
7. ESGE and ESGENA Position Statement on gastrointestinal endoscopy and the COVID-19 pandemic. https://www.esge.com. (accessed 21 March 2020).
8. Lui R, Wong S, Sánchez-Luna S, et al. Overview of guidance for endoscopy during the coronavirus disease 2019 (COVID-19) pandemic. *J Gastroenterol Hepatol* 2020; **35**: xxx.
9. Ng K, Poon BH, Kiat Puar TH, Shan Quah JL, Loh WJ, Wong YJ et al. COVID-19 and the Risk to Health Care Workers: A Case Report. *Ann Intern Med* 2020. doi:10.7326/L20-0175.