



Editorial article

COVID-19 and gastrointestinal tract[☆]

COVID-19 y aparato digestivo

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No doctor can ignore the fact that the worldwide pandemic due to the SARS-CoV-2 coronavirus, whose associated clinical presentation is called COVID-19 (*coronavirus disease 2019*), will represent a before and an after in the History of Medicine, particularly with regard to acute respiratory pathology, with as many contagions and fatal outcomes as there are, but the virus' digestive system involvement already seen and, no doubt, to be experienced in the future, cannot go unnoticed.

Undoubtedly, the digestive system involvement will have much less relevance than the respiratory one, but, surely, it will have to be known and taken into account from now on, and some of the diagnostic approaches, even the therapeutic ones, may have to change in the coming weeks and months.

This *Editorial* aims to disclose the information currently available, as of March 2020, on gastrointestinal tract involvement due to SARS-CoV-2 infection.

According to a recent report, SARS-CoV-2 RNA was detected in a stool sample, raising the issue of gastrointestinal viral infection and the faecal–oral route of transmission.¹

In a very recent study, Fei Xiao et al.² demonstrated that SARS-CoV-2 infects the epithelial cells of the gastrointestinal glands of the stomach, duodenum, and rectum, and, to a much lesser extent, of the oesophagus. Continuous positive detection of viral RNA in stools suggests that infectious virions are secreted by gastrointestinal cells infected with the virus.

Related to these findings, faecal–oral transmission could be an additional route for the spread of SARS-CoV-2, so faecal–oral transmission should also be prevented to try to control the spread of the virus.

In this sense, it is conceivable that the real-time PCR test can be used to detect virus RNA in stools for the diagnosis of the disease.

In the aforementioned study, it was also observed that gastrointestinal infection by this virus, and its possible faecal–oral transmission, can persist even after removal of the virus from the respiratory tract.²

According to another study,³ which included 1099 laboratory-confirmed patients with COVID-19, from 552 hospitals in China, 55

of them (5.6%) had nausea or vomiting, or both, and 42 (3.8%) had diarrhoea.

In light of this, it can be thought that asymptomatic carriers or people with mild digestive symptoms (nausea, vomiting, diarrhoea and abdominal pain) in an early phase of the disease may have been neglected or underestimated as possible sources of infection to other people who, apparently, have not been in contact with subjects showing respiratory symptoms. For this reason, physicians must be careful to quickly identify patients with initial gastrointestinal symptoms as a possible source of infection, and maximise, if possible, the recommendation of frequent handwashing.

On the other hand, the SARS-CoV-2 sequence could also be detected in the saliva of most infected patients –suggesting the possibility that the salivary gland may also be infected by the virus– even when undetected in the nasopharyngeal aspirate.⁴

But not only does the gastrointestinal tract appear to be vulnerable to infection in COVID-19, the liver can also be affected by this infection, in up to 60% of infected patients.

Liver damage, which can be mild to moderate, including elevated transaminases, hypoproteinaemia, and prolonged prothrombin time, have been reported in existing clinical research on COVID-19.⁵

Little is known about the effect of SARS-CoV-2 infection on the liver, although the possibility that this virus could cause direct damage to the intrahepatic bile ducts has been considered.⁶

The interactions and effects of SARS-CoV2 on the oesophagus, stomach, bile ducts, and pancreas have not been reported at present, but may appear in the literature in due course as methods of detection continue to improve.⁷

Apart from the involvement of the digestive system by the novel coronavirus, the implications that COVID-19 may have in patients with some pre-existing digestive disease are no less significant.⁸

Patients with COVID-19 and cancer have been shown to be at increased risk of serious events.⁹

On the other hand, given the common use of biological drugs (infliximab, adalimumab) and immunosuppressants (azathioprine, mercaptopurine) in patients with inflammatory bowel disease (IBD), there is some concern that they may be more susceptible to SARS-CoV-2 infection, although no one infected with this virus has yet been reported in a cohort of more than 20,000 Chinese patients with IBD.¹⁰ Despite this, the Chinese healthcare system has already implemented several strategies to minimise the potential

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risk of SARS-CoV-2 infection in IBD patients, among others, their own clinical practice guidelines.¹¹

In short, the digestive system also seems to be affected in COVID-19, both *de novo*, as when there is previous gastrointestinal pathology, facts that we must take into account in the management of this new emerging disease.

It is *vox populi* that the 'Chinese copy almost everything', but, in this COVID-19 pandemic, they seem to be doing things pretty well, at least from a health perspective, so it is no demerit to copy them now regarding their management of cases.

Conflict of interest

The author declares no conflict of interest.

References

- Holshue ML, DeBolt C, Lindquist S, Lofy KH, Wiesman J, Bruce H, et al. First case of 2019 novel coronavirus in the United States. *N Engl J Med*. 2020;382:929–36.
- Xiao F, Tang M, Zheng X, Liu Y, Li X, Shan H. Evidence for gastrointestinal infection of SARS-CoV-2. *Gastroenterology*. 2020;pii:S0016-5085:30282–91 [Epub ahead of print].
- Guan WJ, Ni ZY, Hu Y, Liang WH, Ou CQ, He JX, et al. Clinical characteristics of coronavirus disease 2019 in China. *N Engl J Med*. 2020. <http://dx.doi.org/10.1056/NEJMoa2002032> [Epub ahead of print].
- To KK, Tsang OT, Chik-Yan Yip C, Chan KH, Wu TC, Chan JMC, et al. Consistent detection of 2019 novel coronavirus in saliva. *Clin Infect Dis*. 2020. pii:ciaa149 [Epub ahead of print].
- Gu J, Han B, Wang J. COVID-19: gastrointestinal manifestations and potential fecal–oral transmission. *Gastroenterology*. 2020;pii:S0016-5085, 30281-X [Epub ahead of print].
- Chai XQ, Hu LF, Zhang Y, Han W, Lu Z, Ke A, et al. Specific ACE2 expression in cholangiocytes may cause liver damage after 2019-nCoV infection. Preprint Posted online February. 2020;03, bioRxiv 931766.
- Ong J, Young BE, Ong S. COVID-19 in gastroenterology: a clinical perspective. *Gut*. 2020. pii:gutjnl-2020-321051.
- Mao R, Liang J, Shen J, Ghosh S, Zhu LR, Yang H, et al. Implications of COVID-19 for patients with pre-existing digestive diseases. *Lancet Gastroenterol Hepatol*. 2020;pii:S2468-1253:30076–85, [http://dx.doi.org/10.1016/S2468-1253\(20\)30076-5](http://dx.doi.org/10.1016/S2468-1253(20)30076-5) [Epub ahead of print].
- Liang W, Guan W, Chen R, Wang W, Li J, Xu K, et al. Cancer patients in SARS-CoV-2 infection: a nationwide analysis in China. *Lancet Oncol*. 2020;21:335–7.
- Mao R, Chen MH. Networked clinical study collaboration on inflammatory bowel disease in China. *Am J Gastroenterol*. 2018;113:1266.
- Chinese Society of IBD. Managing IBD patients during the outbreak of COVID-19. *Chin J Dig*. 2020;40:E001.