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Editorial

COVID-19 in Egypt: Through crisis to adaptation; a gastroenterologist's perspective



Coronavirus disease (COVID-19) is a highly contagious and rapidly spreading viral infection caused by the SARS-CoV-2 virus [1]. Since December 2019, the SARS-CoV-2 infected more than 3.5 million persons globally after it emerged from Wuhan, China [2]. Person to person spread of COVID-19 can occur by inhalation of droplets from infected persons, and by contacting polluted surfaces with droplets of patients' secretions [3,4]. Since the announcement of the 1st case of COVID – 19 infection in Egypt on February 14, 2020, the number of cases increased to exceed 7000 cases by May 2020. The rate of infection in Egypt is estimated at 67/1 million, with a mortality rate of 6.4% at the time of preparation of this manuscript [5].

The main manifestations of COVID-19 infection are fever, cough, lymphopenia, and ground-glass opacities in chest computed tomography (CT) [6]. Many reports documented gastrointestinal manifestations, including nausea, vomiting, diarrhoea, loss of appetite, and abdominal pain [6–8]. Liver enzymes and bilirubin were increased in up to >50% of hospitalized patients [1,6,9–12]. Liver injury is usually mild and does not require specific treatment [12]; however, rare cases of severe acute hepatitis in patients with COVID-19 have been reported [9]. Clinical practice in gastroenterology and hepatology services settings are currently challenged by many restrictions during this outbreak. To date, several reports and technical guidance have been issued by different academic bodies to advocate for adequate practices in these fields during this pandemic [13,14]. Such challenges are even more prominent in a country with a unique situation regarding the prevalence and management of liver and gastrointestinal diseases like Egypt [15]. In this report, we are reviewing these challenges and impacts.

COVID-19 and telemedicine use: The Egyptian situation

Telemedicine is about providing a medical service from distance using telecommunications. This type of medical care is becoming popular nowadays thanks to the increasing demand for social distancing mandated by the COVID-19 pandemic. Since the beginning of the current pandemic, there is a universal trend to use telemedicine in following up cases in different specialties [16,17]. However, neither Egyptian patients nor doctors are used to this pattern of clinical practice before the pandemic. High levels of care for liver disease patients are not provided universally everywhere in Egypt, and sometimes patients have to travel for hundred kilometers to reach tertiary care centers where they are followed up. Telemedicine has started in many centers in Egypt after the COVID-19 pandemic by customizing dedicated phone numbers

for different gastroenterology and hepatology services as viral hepatitis clinics, liver cirrhosis clinics, vascular liver diseases clinics, and inflammatory bowel disease (IBD) clinics. These numbers were conveyed to patients by different methods, including social media. The task is not easy in a country with an illiteracy rate of about 27% [18], which would represent a significant problem during communication with patients through telemedicine. Many patients cannot write or read neither the investigations they are asked to do, nor the medications they are receiving or asked to start.

Till the moment, consultations through e-mails or video calls are not available in the majority of centers in Egypt. Although many centers have multidisciplinary teams for the management of different gastrointestinal and hepatic diseases (hepatocellular carcinoma and IBD), online meetings for these teams are not a common practice. In conclusion, telemedicine in Egypt is in its primitive stages; many efforts are needed to make it an option that can be utilized during COVID-19 pandemic and similar situations.

Management of patients with viral hepatitis and liver cirrhosis

The prevalence of HCV Ab and HBsAg is 14% and 1%, respectively [19]. As a response to this significant prevalence of viral hepatitis in the country, Egypt established a remarkable model of care for the management of viral hepatitis that was able to treat more than 4 million HCV patients [20–23]. Additionally, the country launched a national screening program for hepatitis C in 2019 that succeeded in the screening of 57 million persons for HCV infection [24]. Viral hepatitis specialized treatment centers are managed by the Egyptian National Committee for Control of Viral Hepatitis (NCCVH) and follow a standardized treatment protocol. Since the start of the COVID-19 pandemic in Egypt, starting antiviral therapy for new patients was withheld.

Similarly, patients who have already started treatment for chronic hepatitis (HCV/HBV), are asked to continue treatment and to have their follow up laboratory investigations off-site. Moreover, a marked reduction in the number of follow up screening visits for hepatocellular carcinoma (HCC), were reported in all centers.

As per international recommendations in this context, outpatient visits for patients with compensated liver cirrhosis were limited to urgent clinical situations (e.g., jaundice, disturbance in conscious level, and recent onset of hepatic decompensation). Prophylaxis against spontaneous bacterial peritonitis (SBP) and hepatic encephalopathy are frequently prescribed for patients with decompensated cirrhosis in order to limit the need for

hospitalization. Typical findings in patients with portal hypertension include thrombocytopenia and may be leucopenia [25], which may be also a feature of COVID-19 infection [6]. This led to a noticeable increase in the number of requested chest imaging (chest X-ray more than chest CT) for patients with decompensated cirrhosis to exclude COVID-19 infection.

Liver transplantation settings in Egypt during COVID-19 pandemic

In Egypt, liver transplantation is available only in limited governmental tertiary care centers and in a minimal number of private hospitals. Only living-donor liver transplantation is the available type of transplantation in Egypt [26]; thus, preparation for liver transplantation requires visits for both recipients and donors. Preparation for liver transplantation in the era of the COVID-19 pandemic requires testing for SARS-CoV-2 for donors and recipients before the operation, which is not applicable in many countries, including Egypt, because of the test sparing to suspicious cases only [27]. Therefore, the majority of the Egyptian centers for liver transplantation preferred to postpone the preparation and operations of transplant.

Managing outpatient gastrointestinal diseases during COVID-19 pandemic in Egypt

The fact that gastroenterological manifestations can be a presentation of COVID-19 infection created a significant challenge and stress in practice [28]. In daily practice, a high index of suspicion for COVID-19 diagnosis is currently considered while dealing with cases presenting with fever, nausea, vomiting, and diarrhoea instead of considering them merely as gastroenteritis. There are increasing concerns among gastroenterologists being at higher risk of getting infected with SARS-CoV-2 than other specialties [29]. Consequently, reported numbers of requested investigations by gastroenterologists showed an increase during COVID-19 pandemic to rule out COVID-19. Such an approach will create an extra burden on an already weakened medical system.

Patients with gastrointestinal or liver diseases on immunosuppression 9

There is a marked increase in the incidence of autoimmune diseases in Egypt [30]. The number of IBD and autoimmune hepatitis have significantly increased in the last decade; however, no data are available about the exact incidence or prevalence of these cases in Egypt. One study documented that IBD represents 11.2% of cases presented with fresh bleeding per rectum [31]. Those patients always raise great concern about having a higher susceptibility to COVID-19 infection because of immunosuppressant medications, and whether it is better to stop their medications or not. However, Data suggest that immunosuppression may be protective against COVID-19, as it may prevent the cytokine storm [1,32].

The American Association for the Study of Liver Disease (AASLD), and the European Association for the Study of the Liver (EASL) advise against reducing the dose of immunosuppressive therapy in patients without COVID-19 infection [33,34]. In immunosuppressed liver disease patients without COVID-19, AASLD recommends reducing the dosage of high-dose prednisone to just the needed dose to avoid adrenal insufficiency, reducing azathioprine or mycophenolate dosages, and reducing but not stopping daily calcineurin inhibitor dosage [33]. The American Gastroenterological Association (AGA) recommends that patients with IBD should continue their IBD medications and should

continue their infusion schedules. IBD patients who developed COVID-19 infection should stop thiopurines, methotrexate, tofacitinib, and biological treatment until they get cured.

Biological therapy should be postponed for two weeks in IBD patients who are known to be SARS-CoV-2 positive by RT-PCR but have not developed COVID-19 [35].

Endoscopy units in Egypt during COVID-19 pandemic

The SARS-CoV-2 virus was detected in saliva, and it may be transmitted faeco-orally [36–38]. Endoscopic procedures are considered aerosol-generating; thus, they should be restricted to urgent cases, such as gastrointestinal bleeding, follow-up band ligation for patients with recent variceal bleeding, and urgent biliary procedures for the symptomatic patients or other very necessary indications such as cases of neoplasia [14,39,40]. However, emergency endoscopic procedures, especially variceal band ligations, are still widely performed in many endoscopic units in Egypt because of the already present high rates of haematemesis caused by ruptured oesophageal varices [41].

Management of GI cancer patients during the pandemic of COVID-19

Managing cancer patients during the COVID-19 era represents a particular challenge to oncologists. The significant risk for patients with cancer is the difficulty in receiving needed medical services because of the outbreak. Two main issues related to patient safety are of great concern. First, cancer patients are exposed to infection while on their way to cancer centers to receive their medications. Second, cancer medications can leave patients more susceptible to the severe harmful effects of COVID-19. Firm evidence is available about the association of comorbidities with more severe COVID-19 symptoms and poor outcomes, which could be relevant to cancer patients [42]. Many adjustments to the routine work of oncology departments were applied in Egypt. The Egyptian Supreme Council for Universities released an update for the national guidelines for the management of cancer patients during the pandemic, matched with NCCN and ESMO guidelines. The main issue in these guidelines was focusing on reducing the number of patients' visits. Some measures have been taken as shifting to oral or subcutaneous forms of medications rather than intravenous ones, shifting from weekly chemotherapy protocols to conventional every three weeks regimens, giving prophylactic G-CSF, and whenever possible; hormonal treatment is preferred over chemotherapy. Short courses and hypofractionation of radiotherapy are preferred over other methods. Also, routine follow up policy was changed with postponing unnecessary investigations and depending on telemedicine and phone communication whenever possible. These changes affected the practices in gastroenterological malignancies. In the management of colorectal cancer, for example, there was a shift to oral capecitabine rather than continuous infusion of 5-fluorouracil protocol.

Similarly, and in the management of rectal cancer, the use of short-course pelvic RT during this pandemic was recommended. In the country where HCC is the most commonly reported malignant disease [43], dealing with this unique cancer should attract attention. Meetings for multidisciplinary teams were conducted via videoconferencing in some centers. The current situations markedly impacted available treatment options for patients with HCC. A substantial delay in appointments of interventions (surgery, chemoembolization, and local ablation maneuvers), and evident patient' no-shows were reported in most HCC management centers.

Future outlooks

Many of used medications and equipment in the field of gastroenterology and hepatology are imported and not manufactured in Egypt. This could be alarming as a shortage in some essential requirements that could be encountered with prolonged duration of COVID-19 pandemic and due to interruption of the supply chain can impact the clinical practice in the country. Egypt is setting in example of the unusual efforts of healthcare professionals in limiting the virus spread and mortalities particularly in the setting of a developing country. As this COVID-19 pandemic extends, gastroenterologists will have a solid background in understanding the impact of such a crisis on clinical practice and how to manage it, and become well trained in communicating through telemedicine as a part of their daily practices. Such cooperative effort should help reduce mortality during these trying times.

Compliance with ethics requirements

This article does not contain any studies with human or animal subjects.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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