Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Correspondence

Does interval time between liver transplant and COVID-19 infection make the difference?

Dear Editor,

According to European Association for the Study of the Liver - European Society of Clinical Microbiology and Infectious Diseases (EASL-ESCMID) recommendations [1], coronavirus disease-19 (COVID-19) affected liver transplant recipients should be treated as stated by guidelines from local authorities and a standard immunosuppression regimen has to be maintained, without any mention about interval time between liver transplant and COVID-19 infection.

Reports from literature refers to COVID-19 affected long-term liver recipients, with dissimilar treatment approaches varying from antiviral drugs (oseltamivir or lopinavir/ritonavir) to chloroquine/hydroxychloroquine and immunosuppression regimen minimization/maintenance with controversial and sometimes fatal outcomes, often reported in series including other organ recipients [2,3].

As the liver transplant center of a major Italian hospital involved in the COVID-19 pandemic, we made every effort to protect our patients by providing screening with nasopharyngeal swab (NPS) and COVID-free areas. Nevertheless, a diabetic 61-years-old liver recipient affected by HCV-related hepatocellular carcinoma and cirrhosis, after an initially uneventful postoperative course and a preoperative negative NPS for both donor and recipient, developed fever, dyspnea on the ninth postoperative day. We repeated two NPS that returned positive and chest X-ray that had demonstrated a right inferior lobe opacity. In absence of guidelines or previously reported cases of COVID-19 affected liver recipients on March 21st, 2020 we decided to employ, after 3 days of persistent fever, 6 days of oral chloroquine 500 mg bis in die (BID) followed after fever remission and weaning from oxygen support (no CPAP was needed) by 6 more days of oral hydroxychloroquine 200mg BID, prescribing usual immunosuppression regimen with tacrolimus (blood level 7–8 ng/mL) and steroids and maintaining subcutaneous heparin at prophylactic doses. Afterwards, following a progressive clinical resolution, the patient was discharged with two consecutive negative NPSs on post-transplant day 33.

To the best of our knowledge only Qin et al. reported a pioneering experience in a COVID-19 affected recent liver transplant recipient employing Oseltamivir, intravenous immunoglobulin, and a reduced immunosuppression regimen, producing a complete clinical resolution [4].

Chloroquine/hydroxychloroquine and usual immunosuppression regimen produced equally a complete clinical resolution for our patient and resulted in line with the recent EASL-ESCMID position paper [1]. An assumption could be that in absence of a severe infection we can treat recent liver recipients as other COVID-19 patients and antiviral drugs like remdesivir and tocilizumab related to higher liver risk injury should be reserved in case of worse evolution. Moreover, calcineurin inhibitors could paradoxically play a crucial role in fatal respiratory distress prevention [5], especially in perioperative time when are prescribed at high doses. Calcineurin inhibitors, indeed, acting proximally to the transcription of a set of early lymphokine genes, could mitigate the cytokine storm, the alveolar endothelial damage, and the subsequent microvascular thrombosis, which have been linked to the pathogenesis of dramatic and often fatal acute respiratory distress syndrome [6]. On the other hand, middle-long term transplant COVID-19 patients seem to show a high mortality rate probably caused by prolonged immunosuppression exposure and metabolic-related comorbidities and could require more aggressive treatments [3].

Conflict of Interest

The authors of this article have no conflict of interest or funding to disclose.

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Abbreviations: BID, bis in die; COVID-19, coronavirus disease 2019; EASL-ESCMID, European Association for the Study of the Liver - European Society of Clinical Microbiology and Infectious Diseases; HCV, Hepatitis C Virus; NPS, nasopharyngeal swab.

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