LETTER TO THE EDITORS

A challenging liver transplantation for decompensated alcoholic liver disease after recovery from SARS-CoV-2 infection

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Dear Editors,

In our region, Veneto, the first Italian 2019 coronavirus disease (COVID19)-related death was reported on February 21 in Vo' Euganeo, a small village in the province of Padua. Here, we present the second reported case [1] of an adult patient who underwent liver transplantation (LT) after recovering from severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection.

A 63-year-old woman affected by alcohol-associated cirrhosis was admitted to our Unit on March 31 due to acute kidney injury and spontaneous bacterial peritonitis, both efficaciously treated. MELD was 19, CLIF-AD score 50, and Child-Pugh class B-8. During the hospital stay, a nasopharyngeal swab for SARS-COV-2 PCR test, performed for screening, resulted positive. She remained stable, with no fever, no pneumonia, and oxygen saturation persistently normal. Two consecutive chest X-ray showed left pleural effusion, higher density of left side retrocardiac area and a bedside lung ultrasound showed bilateral B lines. Infectious workup including Chlamydia and Mycoplasma Pneumoniae serology, Legionella Pneumoniae urinary antigen and Streptococcus pneumoniae urinary antigen were negative. Considering that throughout her hospital stay, she remained stable, with oxygen saturation persistently higher than 96% on room air, we did not performed extra-evaluation of lung function. Regarding coagulation tests, the patient presented a high level of D-dimer, probably related to SARSCov2 infection, as known. After the normalization of SARS-CoV-2 nasopharyngeal swabs, she completed LT evaluation and, after a long discussion with transplant surgeons, being as far as we knew at that time the first case in the whole country, she was included in WL for LT. For clinical suspicious, a doppler ultrasound of the lower extremity showed right femoral and left soleal vein thrombosis in a patient with a prior nonocclusive portal vein thrombosis, therefore therapeutic LMWH was started ten days before LT. Anticoagulant therapy had not been already started because the thrombus involved <50% of the main trunk of the portal vein, stable during the 6 months before, therefore it would not have modified surgical technique at transplant. Moreover, the patient had low glomerular filtration rate and platelet count about 50 000/μl, therefore, the balance between advantage of anticoagulation and risk of bleeding was not favorable. On May 7, before admission to WL she had a negative COVID-19 RT-PCR in endotracheal aspirate. A liver graft from a 58-year-old female, HCV positive nonviremic, became available on May 23. Unexpectedly, during the transplant surgery, the presence of an extensive portosplenomesenteric venous thrombosis, not shown at the last pretransplant CT scan performed 2 months before SARSCoV2 infection and at the US-doppler performed 1 month before, made a cavoportal hemitransposition necessary. The immunosuppression (IS) regimen was largely debated considering the prior SARSCoV2 infection and finally based on tacrolimus, mycophenolate mophetil, and steroids. At 6 month after LT, liver and renal function are normal. SARS-CoV-2 antibodies tested 3 months after LT became negative: IgM 0.071 (nl < 1.000 kAU/l) and IgG 0.237 (nI < 1.100 kAU/l).

Whether SARS-CoV-2 infection affects the outcome of patients with liver disease is not fully elucidated [2–7]. In

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our case, despite the poor liver status, the patient recovered from SARS-CoV-2 infection, without developing ARDS, and underwent LT. Arterial and venous thrombosis occurs in more than 30% of ICU patients with COVID-19 [8,9]. This condition is characterized by high levels of D-dimer and fibrinogen, prolonged prothrombin time and activated partial thromboplastin time during SARS-CoV-2 infection. In our case, the patient presented a high level of D-dimer, developed peripheral vein thrombosis and, more importantly, an extension of portal vein thrombosis (PVT) was present at transplant. The latter could be related to the advanced liver failure, but we hypothesize that COVID-19 may have a role in PVT progression. In cirrhotic patients with COVID-19 at high risk of vein thrombosis, with or without prior PVT, the starting or increasing thromboprophylaxis would be useful, as already reported. We learnt that monitoring for thrombosis, including for PVT, in the cirrhotic population during SARS-CoV-2 infection, is mandatory, especially before LT.

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