Outcomes of Coronavirus Disease 2019 in Living Donor Liver Transplant Recipients

TO THE EDITOR:

The coronavirus disease 2019 (COVID-19) outbreak started in China in December 2019 and then rapidly spread all over the world, infecting more than 20 million people and causing more than 700,000 deaths. Overall mortality in COVID-19 is 3%-4%,[1] which generally happens in patients with older age and comorbidities. No evidence-based treatment has been approved so far,[2] and outcomes of COVID-19 in liver transplantation (LT) recipients are not well known at present. In a single-center report from the United States, Lee et al. reported an overall mortality of 18.4% (7 of 38) in LT recipients, and all patients who died had comorbidities.[3] Polak et al. reported a mortality of 15% in 244 LT recipients in an Internet-based survey of European countries.[4]

We present our experience of 12 adult (11 males) living donor liver transplantation recipients who tested positive for Severe Acute Respiratory Syndrome - Corona Virus-2 (SARS-CoV-2) via Real Time - Polymerase Chain Reaction (RT-PCR) tests in respiratory swabs. The mean age of the patients was 53.6 ± 9.2 years. There were 3 (25%) patients who developed COVID-19 early (within 3 months) after LT, and the remaining patients developed the illness at least 18 months after LT. Of 12 patients, 11 (91.7%) were symptomatic for COVID-19 with fever (83.3%), cough (41.7%), and sore throat (41.7%) being the most common symptoms. One patient was asymptomatic and was investigated because of contact exposure. There were 9 (75%) patients with diabetes mellitus, and 4 (33.3%) who had hypertension. Negative respiratory swabs were available in a total of 9 admitted patients. Median duration of detectable virus was 12 days (interquartile range [IQR], 11-19 days). Of the 12 patients, 10 (83.3%) were on tacrolimus-based immunosuppression, and 1 each were on everolimus and cyclosporine-based immunosuppression. The dosage of mycophenolate was reduced in most patients with a diagnosis of COVID-19.

All patients had stable graft function except 1 patient who died because of multiorgan failure. During the illness, median bilirubin, median aspartate aminotransferase, and median alanine aminotransferase levels were 1 mg/dL (IQR, 0.6-1.45 mg/dL), 44 IU/L (IQR, 35-95 IU/L), and 47 IU/L (IQR, 25-77 IU/L), respectively. There were 2 (16.7%) patients who had acute kidney injury. Of the 12 patients, 9 (75%) had radiological evidence of pneumonia. All patients except 1 had mild disease and were treated with supportive measures and low-molecular-weight heparin. One patient with severe disease and cytokine storm died. He underwent LT 82 months before diagnosis and had comorbidities like diabetes, hypertension, metabolic syndrome, and chronic rejection requiring quadruple immunosuppression. He received convalescent plasma transfusion. He had persistent detectable virus until death (day 17 of admission) and required advanced life-supportive measures, including mechanical ventilation and renal replacement therapy.

In patients with mild disease, immunosuppression was continued with the lowering of mycophenolate dosage. No patient had any episode of rejection. Some series have suggested that patients with long duration after LT (thus on minimal immunosuppression) remain at higher risk of mortality,[5,6] but this was not true in the current series. In fact, the patient who died was on 4 immunosuppression drugs due to background chronic rejection. Patients who develop disease in the late posttransplant period may be at an increased risk of severe disease due to comorbidities. Our experience suggests a favorable outcome of COVID-19 infection among LT recipients.

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