

# Liver Transplantation in an ICU Dominated by COVID-19

## TO THE EDITOR:

The letter from D'Antiga about concerns of transplanting patients in the context of coronavirus disease 2019 (COVID-19) pandemic is very interesting.<sup>(1)</sup>

COVID-19 is the name of the infection caused by the severe acute respiratory syndrome coronavirus 2 (SARS-Cov-2) virus. This illness originated in December 2019 in Wuhan, China. Since then, it has been identified in more than 150 countries. The first case of COVID-19 in Portugal was on March 2, 2020.

The intensive care unit (ICU) at Curry Cabral Hospital (CCH) in Lisbon, Portugal, has been supporting the local liver transplantation (LT) program (catchment area of approximately 4 million people), which runs an average of 100 procedures per year. This is a medical and surgical ICU with a regular capacity of 18 beds (10 beds of level 3 care and 8 beds of level 2 care) that are staffed by certified intensivists and specialized nurses.

The ICU at CCH has been designated by the Portuguese Health Minister as one of the first ICUs to treat critically ill patients with COVID-19 given its proximity to the local infectious disease division.

As of March 20, we admitted 11 patients with acute respiratory distress syndrome due to COVID-19 at

the ICU, about a third of all critically ill patients with COVID-19 at that point in Portugal. All of them required invasive mechanical ventilation, and 1 patient died.

To improve the safety of both patients and staff, the capacity of the ICU has been provisionally adjusted to 14 level 3 care beds that are divided into 2 independent sectors: COVID-19 positive (10 beds) and COVID-19 negative (4 beds).

Although almost all elective surgical procedures have been canceled, the ICU still has to provide care to emergent LT candidates. The ICU admits an average of 15 patients with acute liver failure (ALF) and 30 with acute-on-chronic liver failure (ACLF) per year. Given the current case mix and capacity of the ICU, we have introduced the following measures to our standard of care:

- Test emergent LT candidates with polymerase chain reaction for SARS-Cov-2 with pharynx swab. If clinical suspicion is high and pharynx swab has come back negative, a second pharynx swab and, if feasible, respiratory secretions are collected for testing.
- Discuss early with the LT team the need to maintain relatively stable patients with ALF or ACLF in the ICU while awaiting transplant.
- Collaborate with other ICUs inside the hospital or in other hospitals in the region to transfer other medical or surgical critically ill patients to optimize availability for emergent LT candidates.
- Patients and staff from each sector of the ICU use different circuits inside the ICU to minimize the risk of contagion.

Taking into account the rapidly evolving nature of the COVID-19 pandemic worldwide, which threatens to overstretch the capacity of health systems, especially that of critical care resources, there are concerns that the quality of care for patients with ALF or ACLF may be impaired. Furthermore, the risks of treating patients with a highly contagious virus close to patients with severe liver disease who are potentially subjected to transplantation and immunosuppression are difficult to weigh at the present time. Therefore, we urge clinicians to share their experiences in organizing care for emergent LT candidates in the ICU in the era of COVID-19.

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## REFERENCE

- 1) D'Antiga L. Coronaviruses and immunosuppressed patients: the facts during the third epidemic. *Liver Transpl* 2020;26: 832-834.