

LETTER TO THE EDITORS

Coronavirus disease 2019 and transplantation: tackling the challenges of SARS-CoV-2 infection in waiting list candidates

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Dear Editors,

We have read with great interest the article by Polak *et al.* [1] on the behalf of the European Liver and Intestine Transplant Association (ELITA) and the European Liver Transplant Registry (ELTR) recently published in your Journal. The authors provided valuable information on incidence and mortality of coronavirus disease 2019 (COVID-19) among liver transplant (LT) candidates and recipients in Europe. They also gave a clear picture on current practices of donor and recipient management among several European LT Centers.

Notably, the incidence of symptomatic COVID-19 resulted three times higher in LT candidates than in recipients and in the general population (1.05% compared to 0.34% and 0.33%, respectively). This difference increased to almost 10-fold in Italy (3.1%, compared to 0.37% and 0.38%, respectively).

Italy has been one of the first countries hit by COVID-19 and reacted with a strong rearrangement of the healthcare system and deferral of many surgical procedures including nonurgent solid organ transplants

(SOT) [2–4]. As we are now going through a transition phase of the pandemic to a possible endemic disease, we must balance potential risks connected to LT in prior COVID-19 patients with morbidity and mortality of candidates in the waiting list [5,6]. So far, no data are available on LT outcome in candidates with past SARS-CoV-2 infection. Concerns derive from the possible pulmonary and cardiovascular consequences of COVID-19, which might jeopardize the success of SOT [7,8]. Also, major challenges in organ engraftment may result from the microvascular dysfunction and coagulation abnormalities observed in COVID-19 patients due to the direct damage of endothelial cells by SARS-CoV-2 [8].

To our knowledge, no national nor international guidelines have been published on the identification and management of LT candidates with past SARS-CoV-2 infection. Here, we present the decisional pathway implemented at our LT Center during the transition phase of COVID-19 pandemic (Fig. 1).

According to national guidelines, candidates with ongoing SARS-CoV-2 infection are temporary excluded from the waiting list. Patients with clinical recovery and viral clearance ("pastCOVID-19") obtain a full cardiopulmonary assessment 4 weeks after nasopharyngeal swabs (NPS) negativity before being re-activated on the waiting list. Past COVID-19 candidates at high risk of 30-days mortality (i.e., MELD >30) represent exceptions that deserve multidisciplinary discussion on individual basis.

Patients on the waiting list with no history of COVID-19 undergo serological test every 3 months and subsequent NPS if tested positive. Candidates with negative serological monitoring undergo chest CT and NPS upon admission after donor is available. At the time of transplant, SARS-CoV-2 PCR test is performed also on bronchoalveolar lavage (BAL) to definitively exclude

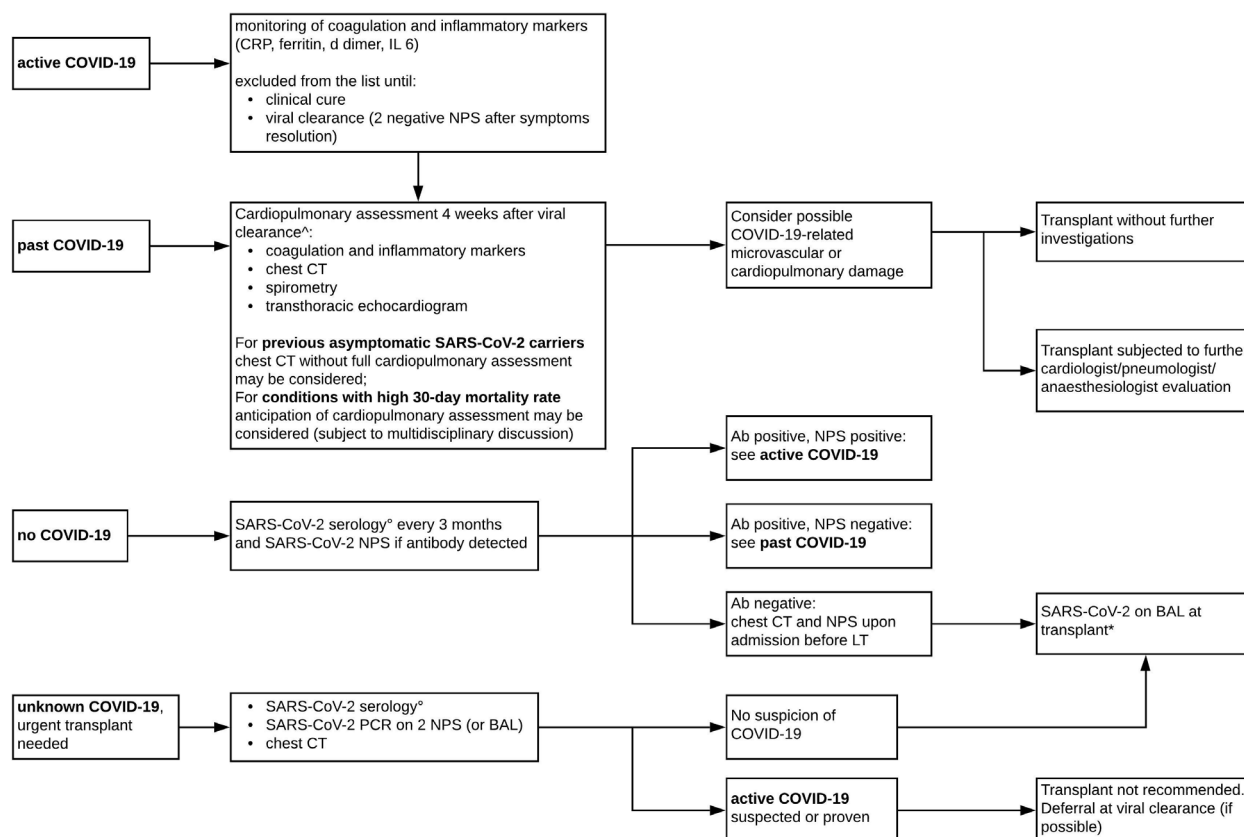


Figure 1 Decisional pathway for the management of patients on the waiting list in our Liver Transplant Centre during the transition phase of COVID-19 pandemic. ^A 4-week interval from viral clearance to cardiopulmonary assessment has been chosen to highlight possible COVID-19-related microvascular dysfunction or cardiopulmonary damage that could hinder Liver Transplant; *Elecys[®] Anti-SARS-CoV-2 serology test (Roche Ltd., Basel, Switzerland), with reported sensitivity and specificity of 99.5% and 99.8%, respectively (14 days post-PCR confirmation); *If BAL positive, patients are isolated in dedicated rooms, healthcare workers defined as close contacts perform NPS and undergo home quarantine while awaiting the results; Ab, antibodies; BAL, bronchoalveolar lavage; CRP, C reactive protein; CT, computed tomography; IL 6, interleukin 6; NPS, nasopharyngeal swab.

infection and minimize the risk of nosocomial outbreaks.

If urgent LT is needed, candidate's status is evaluated through chest CT, serological test, SARS-CoV-2 PCR test on 2 NPS 24 h apart or on BAL. If active COVID-19 is ruled out, the patient is referred to our center for transplantation.

Transition phase of COVID-19 prompts us for urgent decision-making. Transplant activity must resume, yet the lack of strong scientific evidences

demands to carefully assess benefits and risks of each medical act. COVID-19 and its sequelae may have an unprecedented impact on SOT results. It is of paramount importance that decisions are made to protect patients, healthcare workers, and precious resources such as human grafts.

Conflicts of interest

All authors declared no conflicts of interest.

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