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Lung transplantation for COVID-19-associated ARDS

We read with interest the study in *The Lancet Respiratory Medicine* by Ankit Bharat and colleagues,¹ regarding a case series of patients with COVID-19-associated acute respiratory distress syndrome (ARDS) who were bridged to lung transplantation by extracorporeal membrane oxygenation (ECMO). COVID-19 has affected millions of patients, some of whom will develop ARDS² and some of whom will die. Bridging of patients to lung transplantation with ECMO is being used increasingly with growing success.³ Bharat and colleagues carry the concept further and propose a more liberal use of transplantation for COVID-19-associated ARDS. This approach raises medical issues. Some criteria can help in decision making over whether a patient with ARDS is suitable for transplantation. Good potential for recovery, thorough evaluation before transplantation, single organ failure, and informed consent are required to ensure high success rates. In Bharat and colleagues' case series,¹ patients did not necessarily meet these requirements. As expected, the patients had a complicated intraoperative and postoperative course (eg, mass transfusion, continued extracorporeal support, re-thoracotomy, primary graft dysfunction, and prolonged postoperative stay in the intensive care unit [ICU]). The success of a transplantation procedure cannot solely be judged by the fact that a

patient can be discharged from the ICU. At least a year, if not longer, is required before such a procedure should be considered successful.

Furthermore, there is an ethical dilemma. Transplantation for irreversible pulmonary disease is characterised by a global shortage of donor organs. Patients with a good prognosis can die on the waiting list.⁴ Consequently, recipients should be carefully selected. The organ shortage is not relieved but rather aggravated by the COVID-19 pandemic. Accepting high-urgency candidates with ARDS during the pandemic will disadvantage patients on the waiting list, increase waiting-list mortality, decrease post-transplantation survival,⁵ and distort the discriminatory capacity of any organ allocation systems. Around 600 patients are listed for lung transplantation in the Eurotransplant region. At most, 1% of these patients has a lung allocation score (LAS) of 85 and above, thus the reported patients¹ will outperform 99% of patients on the current waiting list. At our centre alone, we identified five patients who fulfilled the criteria mentioned by the authors. These issues should be considered carefully, as this could skew allocation systems tremendously. Given the high mortality of patients with COVID-19 on ECMO, we agree with the authors that lung transplantation should be considered an option; however, we suggest to set the LAS to 0 by default for patients with COVID-19-associated ARDS, thereby allowing rescue allocation for transplantation only.

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