Finally, lung transplant for COVID–19-related pulmonary failure is gaining support and has been reported by several centers across the United States, including our group. There are several important considerations, including viral clearance, extracorporeal membrane oxygenation support, and COVID–19-related coagulopathy in addition to complex patient selection. The authors report reduced induction immunosuppression protocols, with a high rate of rejection (25% of perioperative survivors). Altering induction regimens for patients with COVID-19 should be cautiously considered, although tailoring subsequent immunosuppression regimens should be performed as usual for complex transplant patients. It is unclear how late death from sepsis on postoperative day 71 relates to their immunosuppression regimen. As we head into the second winter of this pandemic, lung transplant will be another tool in the treatment of COVID-19. This will require a multidisciplinary collaborative approach to be successful.

References

Commentary: Gift of life in the time of COVID–19

Michael Hsin, MD, FRCS, CTh (Eng), and Marcelo Cypel, MD, MSc, FRCSC

The COVID-19 pandemic has placed unprecedented pressure on health care systems and has drained hospital resources, such as intensive care unit beds and extracorporeal membrane oxygenation (ECMO) pumps. Reports from the United States and France show that lung transplantation (LTx) activity is severely reduced. Extreme demands on intensivists, the responsible use of limited hospital resources, and the risks of COVID infection to health care workers (HCWs) and LTx recipients represent challenges that need to be balanced against waitlist mortality.

CENTRAL MESSAGE
Lung transplant during the COVID-19 pandemic poses special challenges, including ensuring the safety of health care workers and recipients. Transplant candidacy for COVID fibrosis requires careful consideration.

In this issue of the Journal, Wu and colleagues report a retrospective study evaluating the feasibility and safety of performing LTx during the COVID-19 pandemic using data from the China Lung Transplant Registry from January 23 to March 23, 2020, benchmarked against a cohort from a
similar period in 2019. They implemented special measures that addressed the safety of organ donation, organ transport, selection of recipients, and the clustering of LTx surgery in designated centers, all to minimize the risk of COVID exposure to recipients and HCWs.

Their 2020 cohort consisted of 28 cases, 5 of which were COVID-related acute respiratory distress syndrome (ARDS). In 2020, 25% of LTx recipients required preoperative ventilation and/or ECMO. The 30- and 90-day mortality rates were 10.7% and 14.3%, respectively (20% and 28.3% for the 2019 cohort). The primary graft dysfunction 2/3 rates were similar, although the preoperative gas exchange was worse in the 2020 cohort. Intensive care unit stays and infection episodes were better in 2020. No infections were reported in HCWs involved in donation or transplantation. Although these results are encouraging, there are limitations. These LTx were performed during the decline of the pandemic in China, whereas in the West the pandemic is not yet waning. Relocating LTx surgery to designated centers is not readily replicable elsewhere.

LTxs for COVID-ARDS is controversial, but experience is accumulating in support of this therapy for very select patients. This series from China included 5 COVID-ARDS patients who underwent LTx, with 2 deaths. One of these reported deaths involved uncontrolled intraoperative bleeding, and the other involved severe sepsis. Especially with the current high incidence of COVID-19 in parts of the world such as Europe and United States, even a small selected subset of severely affected patients may represent a very large number. With the predicted significant increase in demand, now more than ever, strategies to optimize donor organ utilization, such as extended criteria donor, donation after cardiac death, and ex vivo lung perfusion are critical to avoid high wait-list mortality.

In the Chinese series, 9 more patients with COVID-ARDS were referred for LTx but were not accepted. Six died, but 3 were successfully weaned off ECMO and ventilation. ARDS patients with complete absence of organ function from influenza or bacterial pneumonia can recover after weeks on ECMO, and the recovery rate of patients with COVID-ARDS on ECMO may be similar to that of patients with ARDS from other causes. It is prudent to allow a period of at least 4 to 6 weeks to allow for lung recovery before considering LTx.

More information regarding the clinical outcomes of a post–COVID-ARDS subset of patients, both those who underwent LTx and survivors without LTx, would be of very high interest.

References