Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

time since transplantation. Further research is needed to determine whether immunosuppression and immunosuppression-associated co-morbidities might play a role.

LSB reports personal fees from Merck Sharp & Dohme and Biotest. CD reports grants and personal fees from Biotest and personal fees from Novartis, Astellas, and Sandoz. LP reports grants from AbbVie and Gilead. CL reports personal fees from Biotest, grants and personal fees from Ethicon, grants from Medtronic, and non-financial support from Novartis. All other authors declare no competing interests.

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Resuming liver transplantation amid the COVID-19 pandemic

The COVID-19 pandemic brought transplantation to a global standstill. Since February, 2020, healthcare providers implemented a radical and focused response to the pandemic, prioritising organisational readiness and resource re-allocation to meet the anticipated influx of patients with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection. Many services, including solid organ transplantation, were suspended as intensive care units (ICU) and anaesthetic resources were re-allocated.

The COVID-19 pandemic has altered the risk–benefit equation around liver transplantation, since the risk of infection in the perioperative period and consequences in an immunosuppressed recipient are of concern.[1] Major surgery reduces systemic immune competence and immediate postoperative ICU requirements carry a risk of nosocomial SARS-CoV-2 infection. A substantial rise in perioperative morbidity and mortality in patients infected with SARS-CoV-2 undergoing surgery has been reported.[2] Moreover, the need for immunosuppressive medications has been associated with increased severity of infection and death during previous coronavirus outbreaks.[3] The risk and implications of SARS-CoV-2 infection in liver transplant recipients is not yet clear.[4] Additionally, occult donor SARS-CoV-2 infection and transmission to the recipient via the graft is unquantified.

The Birmingham Liver Unit (Birmingham, UK) has one of the largest deceased-donor liver transplantation programmes in Europe, with 230 adult and 25–30 paediatric transplants per annum (average 4–5 transplants per week). At the peak of the pandemic, the West Midlands region, where our unit is based, was one of the worst affected regions in the UK, with 15632 (265 per 100000 population) confirmed cases by mid-May, 2020. Rapid community spread of SARS-CoV-2 meant demand for mechanical ventilation exceeded pre-pandemic supply.[5] Our institution re-allocated staff and mechanical ventilators to accommodate for around 150 ventilated patients with SARS-CoV-2 pneumonia, an increase of 200%. All liver transplant activity (except for extremely urgent cases) was temporarily suspended on March 27, 2020, because of a surge in hospital admissions, ICU bed shortage, and organ procurement restrictions implemented by the organ donation authority.[6] Emergency surgery was continued, with an individualised risk assessment approach. At the peak of the pandemic, the ICU had 97 patients within four dedicated SARS-CoV-2 units and 25 additional patients without SARS-CoV-2 in a COVID-19-free clean ICU. 204 patients with suspected or proven SARS-CoV-2 infection were treated in ICU between March 11 and May 13, 2020.

On April 6, 2020, following a detailed assessment of ICU and theatre resources, liver transplant activity was resumed in steps (appendix). A SARS-CoV-2-free pathway was established, including a physically separate clean ICU and hospital ward (step 1). To prevent SARS-CoV-2 infection, all wait-listed patients were instructed to strictly self-isolate (step 2). A rapid protocol for SARS-CoV-2 screening began as soon as an organ was available; the chosen recipient was screened via telephone for symptoms of COVID-19 and adequacy of self-isolation. On arrival at hospital, both nasopharyngeal SARS-CoV-2 RNA RT-PCR and screening

Published Online June 11, 2020 https://doi.org/10.1016/S2468-1253(20)30187-4

See Online for appendix

thorax CT were completed to identify asymptomatic infection (step 3). Patients who were wait-listed and very sick, based on United Kingdom Model for End-Stage Liver Disease (UKELD) criteria, advanced tumours, or variant syndromes with higher mortality, were identified as priority recipients. (step 4). Postoperatively, all patients were managed in a clean ICU and post-transplant ward and treated with standard triple immunosuppression regimen. The paediatric liver transplant programme has continued at reduced capacity throughout the pandemic, since SARS-CoV-2 was less prevalent in the paediatric population and there was adequate ICU capacity, and therefore a lower risk of nosocomial infection.

Using this stepwise approach, between April 13 and May 17, 2020, we did 17 liver transplants. The first was an extremely urgent (category 1) transplant for acute liver failure. The patient recovered without complication, discharged on postoperative day 7. With declining ICU occupancy, a collaborative decision across all UK liver transplant centres was made to resume transplantation for wait-listed patients with highest priority. On May 11, 2020, routine activity resumed and adult transplant activity has returned to the pre-pandemic median. As of May 17, 2020, we have transplanted 14 adult patients with a UKELD ranging from 51–70, including one late re-transplant. The mean ICU stay was 2·7 days (range 1–9) and total hospital stay 11 days (range 6–24 days), with 12 (86%) of 14 patients (85%) safely discharged home thus far. Rapid screening of potential recipients resulted in one cancellation when a proposed asymptomatic recipient was found to have ground glass opacification on screening CT of the thorax, but the nasopharyngeal SARS-CoV-2 RNA RT-PCR swab was negative. At the time of writing on May 28, 2020, there have been no cases of nosocomial SARS-CoV-2 infection in the patients who have undergone liver transplantation in our unit.

Prolonged suspension of solid organ transplant programmes will create disequilibrium within the transplant waiting list and prevent access to life-saving treatment. The number of UK wait-listed patients exceeds the number of transplants by 30% and the organ shortfall is likely to increase after the COVID-19 pandemic. Using all acceptable grafts is important to avoid excessive waiting time and associated mortality. While the adult liver transplantation service was suspended, some whole liver grafts were diverted to the paediatric centre for transplant into suitably size-matched older children.

Minimisation of the cold ischaemia time of liver allografts is vital for successful transplantation. Logistical arrangements for liver transplantation therefore must follow strict timelines. Uncertain ICU bed availability and the implementation of SARS-CoV-2 screening before surgery proved to be logistically challenging. Normothermic machine perfusion was used in two instances to overcome these challenges and allow extended graft preservation times. During this period, we transplanted one graft preserved for 19 h using this method; the recipient recovered without complication.

Thus far, 2020 has presented many new challenges to health-care systems and clinicians. It is now important for health services to learn from the recent month's events, enabling a more prepared response in anticipation of further COVID-19 surges or the emergence of another pathogen.

We declare no competing interests. HL and AH contributed equally.

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Published **Online** June 19, 2020 https://doi.org/10.1016/S2468-1253(20)30191-6

For advice from the **American Cancer Society during the COVID-19 pandemic** see https://www.cancer.org/latest-news/common-questions-about-the-new-coronavirus-outbreak.html

Colorectal cancer screening in the USA in the wake of COVID-19

In the past two decades, we have made strides to boost colorectal cancer screening in the USA, with screening rates increased to 67% of eligible individuals.[1] Current efforts are directed towards boosting screening rates to 80%.

As a result of the COVID-19 pandemic, primary care visits have decreased substantially, and non-urgent and elective procedures are delayed. Subsequently, in March, 2020, the American Cancer Society recommended that no-one should go to a health-care facility for routine (non-diagnostic) cancer screening until further notification, which restricts the ability to screen average-risk individuals for colorectal cancer using colonoscopy or sigmoidoscopy. As a result, screening efforts have largely been suspended and screening