LETTER TO THE EDITORS

Impact of coronavirus disease 2019 on organ donation and transplantation in France

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Dear Editors,

With 187 919 cases and 30 265 deaths by 31 July 2020, France was severely affected by the COVID-19 pandemic, and the two-month confinement that began in mid-March.

Although donor-to-recipient transmission and increased recipient mortality had been suggested by then, transplant-specific data were scarce [1–6]. The French transplant agency (ABM), acting with the public health council and scientific societies, recommended prophylactic measures, authorising procurement only for donors with negative SARS-CoV-2 screening in the 24 h before procurement, no COVID-specific lung abnormality on CT scan and no clinical symptoms of or exposure to it in the previous 28 days. Each recipient's transplantation risks and benefits were reassessed in this context. Kidney, intestinal, pancreatic, islet cell and tissue transplantations were temporarily suspended, except for paediatric grafts and combined transplants.

The pandemic severely affected the transplant programme in France, as elsewhere [7–11]. Between March 1 and July 31, the number of potential deceased organ donors fell by 16% over the same period in 2018–19 (Fig. 1a). Reduced ICU-bed availability for patients without COVID-19, despite a 40% increase in total ICU beds, fewer traffic accidents due to confinement and the need for procurement staff to reinforce emergency services and the ICU may explain this decrease. Positive SARS-CoV-2 tests prevented procurement from only 14 donors, that is, 1% of potential donors between March 1 and July 31. Transplant activity fell by 38.6%, mainly kidney and lung transplants (Fig. 1b).

On May 11, the ABM and scientific societies published guidance for reopening kidney transplant programmes. Centres were encouraged to inform candidates about reopening, limit face-to-face medical consultations by promoting videoconferencing, and restrict access to transplantation for patients with major comorbidities or advanced age. In cases of transplantation, availability of COVID-free departments was required; afterwards, patients' household contacts had to maintain social distancing and wear surgical masks. Living kidney donors and recipients required a negative SARS-Cov-2 test in the 24 h before surgery. Increased transplant activity accompanied the reopening of this programme.

Between March 1 and July 31, 1530 transplants took place (167 heart, 466 liver, 100 lung and 797 kidney transplants). Early mortality is monitored continuously with the CUSUM method. With death or delisting for worsening medical condition as the event and censoring at transplantation, the 3-month survival of waiting list patients on 1 March 2020, did not differ significantly from that of those listed the year before. Three-month survival of patients with a functioning graft on 1 March 2020, was not significantly different from that of corresponding patients a year earlier, except for kidney recipients whose respective 3-month survival rates were 99.4% and 99.3% (logrank test $P = 0.04$). By July 31, 1352 transplant candidates or recipients had been diagnosed with COVID-19 (Fig. 1c); 230 had died: 66 candidates (one liver-kidney, one heart, two liver, two pancreas-kidney, one lung and 60 kidney), 163 recipients (two liver-kidney, two heart-kidney, 16 heart, 18 liver, five lung and 120 kidney) and 1 liver recipient who was a candidate for a kidney transplant. The median time from transplant to COVID-related death was 7.1 years [interquartile range: 3.2; 13.4]. The regions most affected were the east and Ile-de-France (Fig. 1d).

Organ donation and transplant activity are now recovering slowly from the decline due to the pandemic's effect on hospitals.

Conflict of interest

The authors have declared no conflicts of interest.

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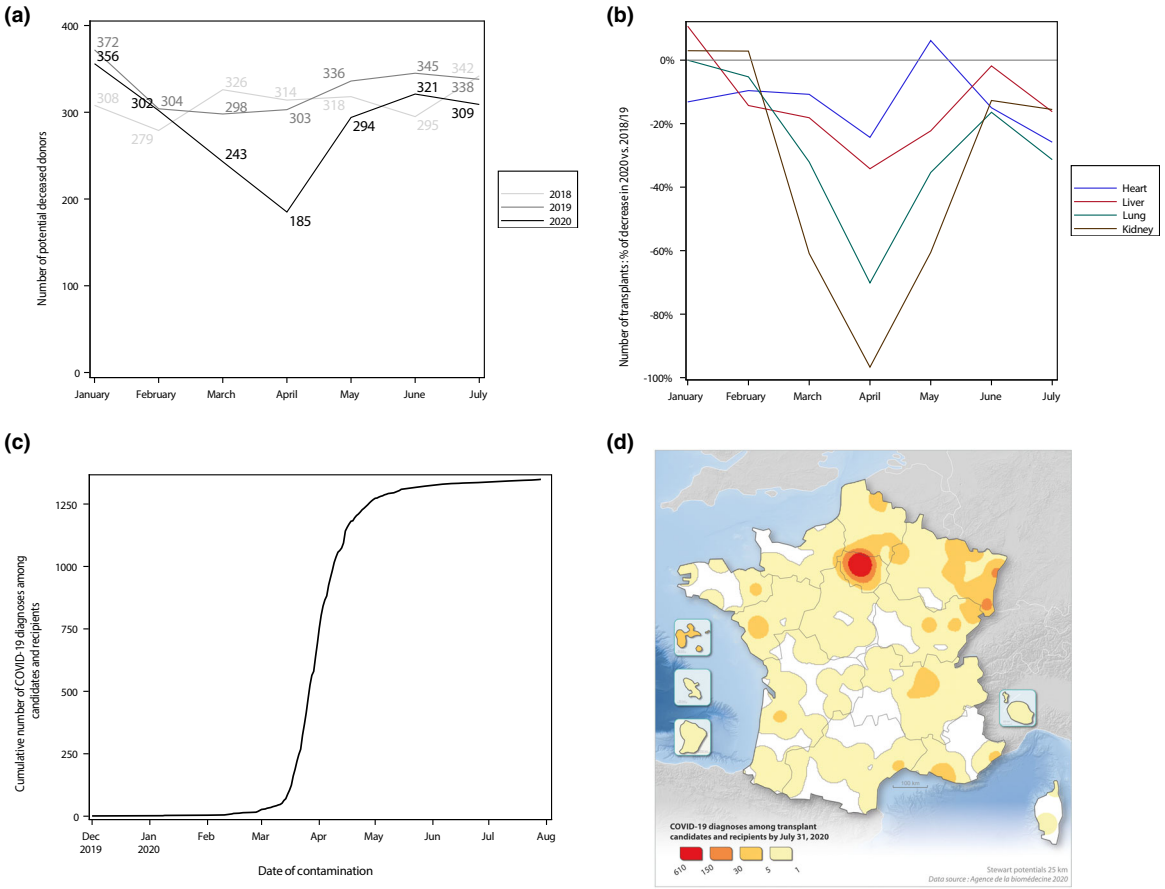

Figure 1 Organ donation and transplantation activity during the COVID-19 pandemic in France and its spatio-temporal distribution among candidates and recipients. (a) Number of potential deceased donors identified each month in France from 1 January through 31 July 2020. (b) Change in monthly transplant activity in France in 2020 compared with the average of 2018 and 2019, from January 1 through July 31. (c) Cumulative number of COVID-19 cases diagnosed in France among transplant candidates and recipients, from 1 December 2019 through 31 July 2020. (d) Heat map showing the geographic distribution of the cases of COVID-19 diagnosed in France among transplant candidates and recipients by 31 July 2020.

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Data availability statement

Data available on request from the corresponding author.

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