LETTER TO THE EDITORS

Stable and safe organ procurement and transplantation during SARS-CoV-2 pandemic in Germany

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To the Editors,

Solid organ transplantation is a lifesaving routine procedure. In the wake of the COVID-19 pandemic, procurement and transplantation programs in many countries experienced a considerable reduction of organ donation and transplantation by up to 90% [1] caused by an

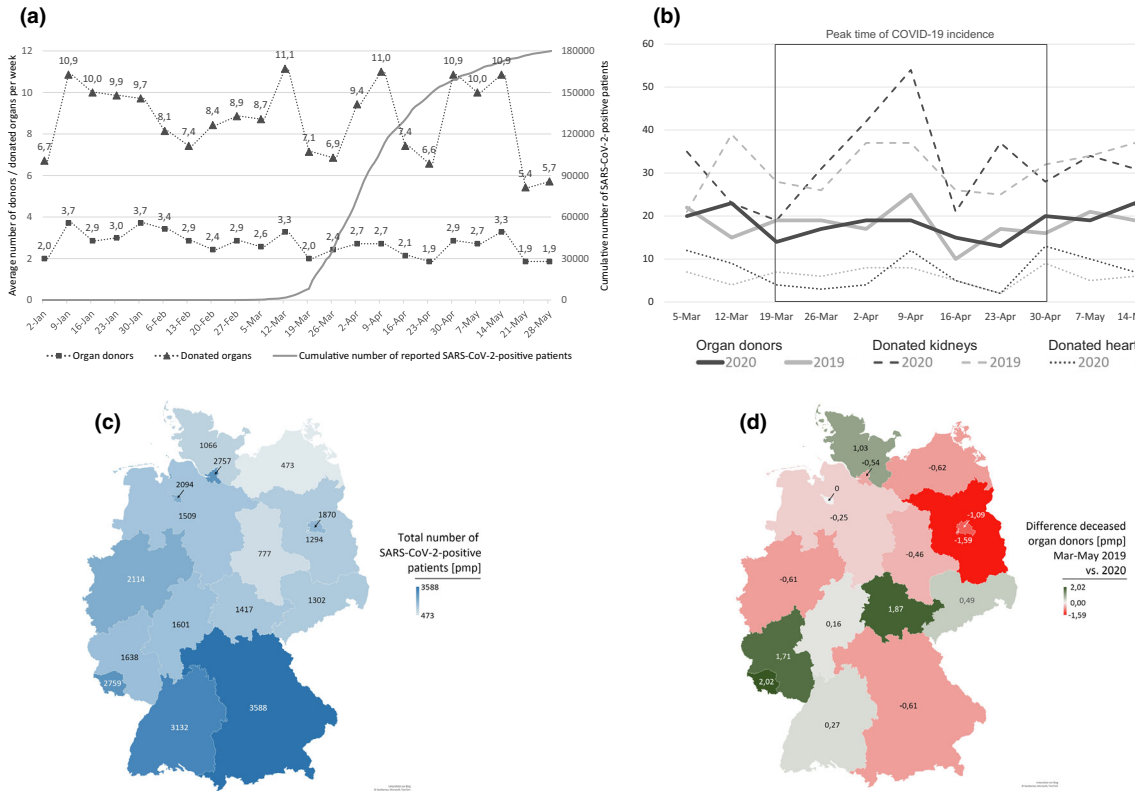

Figure 1 (a) Average daily number of actual organ donors and transplanted organs in Germany for each week from January to May 2020, versus cumulative number of SARS-CoV-2-positive patients. (b) Number of actual organ donors, transplanted kidneys/hearts per week—Germany, March/April/May 2020 versus 2019. (c) Total number of newly reported SARS-CoV-2-positive patients per million population in the different German federal states—Germany, March/April/May 2020. (d) Difference in the number of actual deceased donors in March–May 2020 versus March–May 2019 per million population (pmp) for the different German federal states. There is no correlation between the number of newly detected infections pmp and the change in the number of organ donors.

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capacity overload of healthcare providers but also for fear of increased COVID-19-related risks for transplant recipients acquired by viral transmissions from donor to recipient or early after transplantation [2]. Competition for intensive care capacity for severely ill COVID-19 patients versus transplant recipients and organ donors could also have played a role. In Germany, early pandemic management with high-capacity testing including all potential organ donors, marked extension of intensive care capacities, structural healthcare system with a relatively high number of hospitals with intensive care units (1248) as well as transplant centers (40) with high capacities, and regional organization of organ donation and transplantation may have been advantageous. Here, we present data demonstrating that despite having high SARS-CoV-2 infection rates per million inhabitants (approx. 2200 pmp, end of May), organ procurement and transplantation rates in Germany remained completely stable.

A nationwide analysis of the number of SARS-CoV-2-positive patients from the Robert Koch Institute was correlated timely and regionally with organ procurement and transplantation data obtained from the German organ procurement organization (DSO). COVID-19 cases were collected in Germany in the largest European COVID-19 registry (LEOSS).

In Germany, organ donation and transplantation rates are lower and more fluctuating in comparison with France or the United States [1]. However, the pandemic did not lead to substantial decrease in organ donation even at the height of COVID-19 incidence from March 16 to April 30 (Fig. 1a). A comparison between organ donation in March and April in 2019 and 2020 (Fig. 1b) demonstrated a mere 4.5% decrease. Transplantation rates for any deceased donor organ remained stable during the pandemic. The inhomogeneous COVID-19 disease distribution within Germany (Fig. 1c) was not reflected by regional changes in organ donation (Fig. 1d). A survey demonstrated that all regional transplant programs continued their transplant activity for any deceased donor organs using a careful risk–benefit evaluation for each recipient. Based on the same consideration, living donor transplants were generally paused.

Organ transplantation during pandemic appeared to be safe, since only few SARS-CoV-2-infected transplant recipients (55 up to end of May) were reported to the largest German COVID-19 registry (LEOSS). Of these patients, only 4 (7.3%) had developed COVID-19 disease within the first three months after transplantation. In addition, of the 743 potential donors (03–05/2020) reported to the DSO only 5 (0.7%) had to be excluded from donation because of a positive SARS-CoV-2 PCR. To date, no donor-to-recipient transmission of the infection has been reported in Germany.

In conclusion, the favorable healthcare conditions and management in Germany allowed stable and safe organ procurement and transplantation despite more than 180,000 SARS-CoV-2 infections. The overall unfavorable organ donation situation leading to long organ waiting times may have contributed to the strategic decision to continue with all transplant program activities during the pandemic.

Materials and methods

Ethical consideration

Data of COVID-19-diseased transplant recipients were collected in the Lean European Open Survey for SARS-CoV-2 Infected Patients (LEOSS) registry. The institutional review board of the University of Frankfurt (IRB number: 20-600) approved the study. The study did not require informed consent for the patients included, since data are collected in an anonymous fashion.

Data collection on the numbers of organ donors and transplanted organs as well as SARS-CoV-2-infected patients occurred on a legal foundation via the German organ procurement organization as well as the Robert Koch Institute. For the use of these aggregated anonymous data, no approval of an institutional review board is required.

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Conflicts of interests

The authors have no conflict of interest to disclose.

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