

COVID-19 and “Lockdown” in Organ transplantation in the UK

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COVID-19 and “Lockdown” in Organ transplantation in the UK

Coronavirus disease 2019 (COVID-19) is an ongoing public health emergency and presents immense challenges to healthcare services worldwide. The largest spread and death rates are reported in USA, Italy, Spain and the UK. Within the UK, more than 220 000 people have tested positive and 32 000 deaths have occurred as of 11 May 2020 (1). To limit transmission of the virus, the British government implemented strict quarantine, social distancing, self-isolation and hand hygiene measures on 23 March 2020 in accordance with the World Health Organization guidelines (2).

Currently, much of the attention is on finding treatment, developing a vaccine, re-establishing the economy and containing the virus. A largely neglected area is the potential implications of COVID-19 on organ transplantation. Guidelines for organ transplantation programmes are beginning to emerge in some countries. In the Sichuan Province of China living donors, transplant recipients and their families are being screened. However any recipients from high risk areas are not being offered transplants (3). Italy observed a 25% reduction in organ procurement during the initial phase following which guidelines were produced to ensure both routine and urgent transplant activity is maintained. At present all donors are screened and only negative donors are considered (4). Similar recommendations have been provided by the American Society of Transplant Surgeons (5). In contrast, Canada has adopted a precautionary approach suspending all kidney transplants whilst liver transplants are being assessed on a case by case basis (6).

The ongoing pandemic has presented several challenges for transplantation services in the UK. NHS Blood and Transplant (NHSBT) is advising clinicians to screen all deceased donors and COVID-19 patients are automatically excluded from the donor register (7). Many transplant centres across England are closed. Additionally, there has been a complete cessation of living donor (LD) and a drastic reduction in deceased donor (DD) transplants. NHSBT data shows a 72.8% reduction in DD transplants in April 2020 compared to April

2019 (8). Based on this, we have estimated that there could be 904 fewer transplant surgeries in the three-month period of March to May 2020 (Table 1). This is a net addition of approximately 16% to the current waiting list which includes 5699 patients (as of 1 April 2020) (9). This has enormous implications for the median time to transplant which currently stands at 706 days in the case of kidney. Further divided by ethnicity, the median time to kidney transplant is 830 days for Asian and 965 days for Black (compared to 640 days in white Caucasians) at present. Thus, the greatest impact could be seen in the Black, Asian and Minority Ethnic community prolonging the wait time to three years.

This raises several questions. What is the way forward? How long will the lockdown of organ transplantation services continue? Will transplantation services remain suspended until a vaccine is developed? Previous data has shown that over one third of healthy kidneys were transplanted from DD aged 60 and over (10). Thus, can deceased COVID-19 patients with healthy kidneys be used to save the lives of transplant patients and reduce the added burden on services?

References

1. United Kingdom Coronavirus: 223,060 Cases and 32,065 Deaths - Worldometer [Internet]. [cited 2020 May 11]. Available from: <https://www.worldometers.info/coronavirus/country/uk/>
2. Sparrow A, Campbell L, Rawlinson K. UK coronavirus: Boris Johnson announces strict lockdown across country – as it happened. The Guardian [Internet]. 2020 Mar 24 [cited 2020 May 2]; Available from: <https://www.theguardian.com/politics/live/2020/mar/23/uk-coronavirus-live-news-latest-boris-johnson-minister-condemns-people-ignoring-two-metre-distance-rule-in-parks-as-very-selfish>
3. Pan L, Zeng J, Yang H. Challenges and countermeasures for organ donation during the SARS-CoV-2 epidemic: the experience of Sichuan Provincial People's Hospital. Intensive Care Med. 2020 Feb 25;
4. Angelico R, Trapani S, Manzia TM, Lombardini L, Tisone G, Cardillo M. The COVID-19 outbreak in Italy: Initial implications for organ transplantation programs. Am J Transplant. 2020 Apr 17;ajt.15904.
5. American Society of Transplant Surgeons. ASTS COVID-19 Strike Force Organ Retrieval Guidance [Internet]. 2020 [cited 2020 May 12]. Available from:

<https://asts.org/advocacy/covid-19-resources/asts-covid-19-strike-force/asts-covid-19-strike-force-organ-retrieval-guidance#.XrsbKhNKiqA>

6. Canadian Blood Services. Consensus guidance for organ donation and transplantation services during COVID19 pandemic [Internet]. Canadian Blood Service; 2020 Apr [cited 2020 May 2]. Available from: https://profedu.blood.ca/sites/msi/files/20200427_covid-19_consensus_guidance_final.pdf
7. NHS Blood and Transplant. COVID-19 Assessment and Screening Flowcharts - DAT3737/4 [Internet]. NHS Blood and Transplant; 2020 Mar [cited 2020 May 2]. Available from: <https://nhsbt.dbe.blob.core.windows.net/umbraco-assets-corp/18151/dat3737-added-300320.pdf>
8. NHS Blood and Transplant. Organ Donation and Transplantation - Activity figures for the UK as at 1 May 2020 [Internet]. NHS Blood and Transplant; 2020 May [cited 2020 May 3]. Available from: <https://nhsbt.dbe.blob.core.windows.net/umbraco-assets-corp/18294/weekly-stats.pdf>
9. NHS Blood and Transplant. Organ Donation and Transplantation - Annual Activity figures April 2020 [Internet]. NHS Blood and Transplant; 2020 Apr [cited 2020 May 1]. Available from: https://nhsbt.dbe.blob.core.windows.net/umbraco-assets-corp/18279/annual_stats.pdf
10. NHS Blood and Transplant. Organ Donation and Transplantation Activity Report 2018/19 [Internet]. NHS Blood and Transplant; 2019 [cited 2020 May 2]. Available from: <https://nhsbt.dbe.blob.core.windows.net/umbraco-assets-corp/16537/organ-donation-and-transplantation-activity-report-2018-2019.pdf>

Tables

	Organ Transplant Activity 2019/2020 ¹				Shortfall in COVID-19 ²			
	Total	First 3 Quarters (Apr-Dec)	Last Quarter (Jan-Mar)	Average Shortfall in Last Quarter	March	April	May	Total
Deceased Donor (DD)	3762	2915	847	125	199	236	236	671
Living Donor (LD)	1001	770	231	25	61	86	86	233
Total Donors	4763	3685	1078	150	260	322	322	904

Notes: The organ transplant activity has been divided into two subperiods. The last quarter is affected by COVID-19 outbreak, whereas the first 3 quarters are considered as the normal.

¹ The average number of transplants conducted per month during the first 3 quarters (normal) were 324 for DD and 86 for LD.

² The shortfall is calculated based on the 72.8% reduction in DD cases between 01/04/2020 and 26/04/2020 as reported in the Organ Donation and Transplantation data. No LD cases were performed during the COVID-19 lockdown period.

Table 1. Estimated Shortfall of Organ Transplants in March-May 2020 in the UK by Donor Type (8,9)