

Adult Kidney transplant, Organ donation, COVID-19 and living well with kidney Transplant

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The kidney is the most commonly transplanted organ. A kidney transplant is the best and most optimal treatment for patients with end stage kidney disease. Patient with kidney disease are usually referred to the renal specialists across the United Kingdom (U.K.) when they suffer signs or symptoms related to kidneys or when their primary care physicians think that their patient's kidney functions are worsening, and they ought to seek expert and specialist advice in managing advanced the kidney disease.

The signs and symptoms vary from patients to patients. The process and pathway to prepare patients for renal replacement therapy (including dialysis and renal transplants) could take months to almost a year before getting someone on the national list for a renal transplant or having a live kidney donation transplant from friends and family.

1960 marked the first UK Kidney transplant. There were 3190 adult kidney transplants in the year 2019-2020. There are 24 kidney transplant centres in the U.K.

The benefits of Kidney transplants are immense;

- Functional independence
- Better quality of life including (not coming to hospital 3 times a week for dialysis)
- Better work opportunities,
- No tubes or catheters attached to body (hospital haemodialysis or peritoneal dialysis done at home).

Types of Kidney transplantation:

Donation after circulatory death (DCD)

This is kidney transplantation after circulatory death. It is on the rise and is a valuable source of organ transplantation

Donation after brain death (DBD)

This is kidney transplantation after brain death; there is a need to fulfil brain death criteria.

Live donor

This includes unrelated donor (spouse, friends), related (family member), altruistic (no emotional connection).

In 2016/17 31% of kidney transplants in adults were from live donors.

Kidney transplants could be from a deceased donor or a living donor. There are many advantages to receiving a kidney from a living donor. Kidneys from living donors are more likely to work straight away and remain working for longer. Most kidney transplants come from deceased donors. To receive a kidney from a deceased donor, the recipient will need to go on the national transplant waiting list. The average wait for a deceased donor kidney is 2-3 years. The wait could sometimes be longer if the patient belongs to a black or an ethnic minority group; as in certain circumstances, where the donor pool is smaller, and the incompatibilities are higher; the average waiting time on the national deceased donor list could be at least 3-4 years or even longer. There are many factors which affect the waiting time; it is shorter if the patient's blood group is AB, common

tissue type or fewer antibodies in the blood. Antibodies in the blood develop due to sensitising events such as pregnancy, blood transfusion and previous transplantation.

Living donation also increases the overall donor pool in the UK, which means that other patients have a shorter wait for a deceased donor kidney transplant. Saying that, this is somewhat sensitive issue, and it needs careful discussion, involvement of scholars (*Ulema'a*) and clinicians in particular communities, and engagement of wider community members. It is also important for the communities to understand the concept of organ donation, organ donations law in the parts of the United Kingdom, the options of organ donation when it comes to living donors, and the well-being of the recipients of the kidney transplant. The law around organ donation changed in England in May 2020: referred to as the Max and Keira's law (Deemed Consent) and all adults are now considered as having agreed to donate their own organs when they die, unless they record a decision not to donate, are in one of the excluded groups or have told their family that they don't want to donate. However, relatives will still always be consulted before organ donation goes ahead and each year, opportunities for transplants are missed because families aren't sure what to do. This article will not discuss those in any greater detail here.

As of 31 March 2021, there were around 26.7 million – or 4 in 10 people on the NHS Organ Donor Register. However, people need to tell their family to help ensure their family supports their decision. Figures from the North East and Yorkshire and Humber transplant network reveal that at 31 March, 2021, there were 514 people in the North East and Yorkshire areas on the kidney transplant waiting list.

It is important that patients are provided with enough and relevant information during their consultation and through each and every stage of their journey being kidney patients, for them to discuss it with their loved ones and also to have the opportunities to ask the experts of what suitable options are possible for them. For some patients, a kidney transplant is not a possible or a viable option and this needs to be clearly explained to the patient and families if that is the case. Patients and their loved ones are bound to be anxious and it is only important to support them throughout the process.

Living donors are usually family members or close friends, but NHS Blood and Transplant (NHSBT) also supports altruistic donors who may want to come

forward. Once the patients confirm that they wish to proceed, they undergo tests to check compatibility with the recipient. Living donation provides better outcomes for the recipient than a deceased donor kidney. This is because the living donor in a majority of circumstances is more likely to share the same tissue type as the recipient and a living donor transplant is performed as a carefully planned elective procedure rather than an emergency one. Where the intended donor is not compatible, there is also the option of taking part in the UK Living Kidney Sharing Scheme, which pools donor and recipient pairs to help find better and compatible matches.

In certain circumstances where the chances of getting a kidney whilst waiting on the national deceased list is long due to increased antibodies or increased chances of failure, there are occasions where steps and measures are taken to minimise the risks of incompatibility by treating live donors before the transplant surgery and immediately after it. This has to be discussed in the wider multidisciplinary team (MDT) meetings and the risks and benefits of such treatment and complications discussed with patients and documented in their case notes.

We are extremely lucky in Bradford to have a forward thinking and transplant promoting team right from our lead clinicians to practicing nephrologists who look after transplant patients, specialist transplant nurses, pre-dialysis and haemodialysis specialist staff who openly talk about kidney transplant and its implications and only recently Bradford Teaching Hospitals NHS Foundation Trust has appointed a living donor coordinator to lead promotional activity throughout the district and one of the prime responsibilities would be to engage with families and community groups about the benefits of living kidney donation and promoting organ donation and this is a major step forward for living donor transplantation in Bradford and Craven District. We have a cultural and health improvement officer who actively engages with patients and families during the whole process and ensures patients are treated with respect and dignity and is herself a huge transplant first champion.

Transplantation is a great medical success story due to the increase in public support for donation and has been carried out and has saved millions of lives worldwide. It has prolonged lives and has cut cardiovascular events in patients who otherwise would have been on dialysis and had succumbed to its complications. In common with many other services, COVID 19 has had a significant impact on donation and transplantation activity and patients waiting for a transplant. As we begin to recover from the pandemic, Max and Keira's law will play an

important part in the future of donation and transplantation by helping to increase the number of organs for transplantation for patients waiting for a transplant.

We (as in health professionals) need to work together with the British Transplant Society and NHS Blood and Transplant (NHSBT), patients, families, communities and scholars and religious leaders to meet the current challenges and to support colleagues working in this field so that the future of organ donation and transplantation is efficient and sustainable for our patients.

There had been a pause in transplant activities briefly during the first COVID-19 peak between April 2020 to June 2020 due to increasing cases of COVID-19, mortalities associated with COVID-19, uncertainties about the effect of corona virus on immunosuppression in patients and the risk of patients contracting infection whilst in hospital and the fact that energy, resources and manpower were all diverted towards saving lives of patients affected with COVID-19. This data was consistent with the worldwide reduction in transplant activity during the first three months of the pandemic. A recent study in the Lancet Public Health assessed organ transplant (kidney, liver, lung and heart) from 22 countries before and after the start of COVID-19 pandemic where an overall decrease in transplant activity was noticed. Kidney transplant was most affected followed by lung, liver and heart.

The number of Kidney transplants from 1st April 2019 to 31st March 2020 as per the NHSBT publications included **3452 kidney transplants** the highest compared to other solid organ transplants namely **heart (179)**, **lung (160)**, **liver (949)**, **pancreas (217)** and **intestine (20)**, thereby giving the recipients new ray of hope and light.

Leeds Teaching Hospitals NHS Trust is the tertiary centre that provides specialist transplant surgical care for patients across Yorkshire. The numbers in terms of activities during COVID-19 pandemic are as below;

- 2019-2021 – total transplants 180, Live related donors 46
- 2020-2021(so far)– total transplants 152, Live related donors 28

Numbers so far (Jan 1st- July 29th 2021)

- 74 deceased transplants

- 28 live donors/transplants

In Bradford Teaching Hospitals NHS Foundation Trust, we had 27 renal transplants in 2020 and 18 in 2021, this also included 5 live donor kidney transplant operations. The number of referrals from practicing nephrologists to our specialist transplant team; to instigate and initiate transplant work up and assessments for their dialysis and advanced chronic kidney disease patients has gone up from 55 in 2020 to 68 in 2021 and this is very encouraging.

The transplant team reviews all the available information, comorbidities, medical and surgical conditions before deciding on listing patients for kidney transplant. All donated kidneys carry some risk, though in general this is much lower than the risk of long-term dialysis. Generally, kidneys from living donors have lower risks than kidneys from deceased donors

Post-transplant it is important that the patient attends regular transplant follow-up clinics, takes their medications regularly, and attends routine or urgent blood tests including any procedures to determine the cause of worsening transplant functions. The average life span for a functioning kidney is around 10-12 years but we have had some patients who have the gift of a kidney transplant and have looked after it for almost 40 years.

Re: COVID-19 vaccination and renal transplant recipients, it has been widely circulated and advised that patients with transplant and on immunosuppression were categorised as clinically extremely vulnerable and therefore were on the priority list for vaccination.

The UK kidney association (UKKA) has reviewed the joint committee on vaccination and immunisation (JCVI) guideline and has recommended the use of a third COVID-19 vaccine in the renal transplant patients and those who are on the transplant waiting list.

For further information please refer to the NHSBT website on kidney transplantation, UKKA website under patient information section, Kidney care UK and national kidney foundation.

To find out more and register your decision, visit the NHS Organ Donor Register at www.organdonation.nhs.uk and share your decision with your family. Users of the NHS app, can also use this to record, check or amend their details or decision.

References:

1. Bradford Teaching Hospitals NHS Foundation Trust Press release 14th August 2020.
2. National health Blood and Transplant (NHSBT) - www.nhsbt.nhs.uk/organ-transplantation.
3. UK kidney association (UKKA) statement on 3rd COVID-19 vaccination, 15th September 2021.
4. British Transplant society information-resources <https://bts.org.uk/information-resources/>.
5. Leeds teaching hospitals NHS Trust BHLY renal transplant newsletter publication on kidney transplant activities in Yorkshire region summer 2021.
6. Max and Keira's Law – the Organ Donation (Deemed Consent) Act 2020
7. Olivier Aubert, MD, Daniel Yoo, MPH, Dina Zielinski, PhD, Michael Dürr, MD et al. COVID-19 pandemic and worldwide organ transplantation: a population-based study, *The LANCET Public Health* August 2021.