PERSPECTIVE

Telemedicine's role in kidney transplantation

Jacek Rysz*, Emma Johnston

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ABSTRACT

For kidney transplant evaluation and follow-up care for both the recipient and donor, access to transplant facilities is a major hurdle. Geographical, financial, and logistical obstacles may prevent potential kidney transplant recipients and living kidney donors from contacting a transplant facility and sustaining continuity of care after the procedure. The access barrier to transplant facilities may be removed through telemedicine using synchronous video visits. Telemedicine can be used by transplant clinics to begin the evaluation process for possible donors and recipients, especially for those who find it difficult to visit in person or when clinic capacity is limited, as might be the case during a pandemic. Similar to this, transplant centers can use telemedicine to continue post-transplant follow-up care without having to incur the expense and difficulty of travel. However, the development of kidney transplant services based on telemedicine is mostly reliant on telemedicine infrastructure, insurance policy, and state laws.

Keywords: Geographical; Public Health Emergency (PHE); Kidney; Transplant; Telemedicine

INTRODUCTION

In the United States, over 100,000 people who have kidney failure are waiting for Transplants (KT). For the majority of individuals with renal failure, KT is the best treatment. When compared to dialysis, it is linked to higher survival rates, improved quality of life and cost savings for the healthcare system. The number of kidney transplants performed in the United States, however, is still much lower than the need. Only 11,152 kidney transplants from deceased donors and 6858 from living donors were carried out in 2019. In addition to the lengthy waiting period for kidney transplants from deceased donors, recipient and donor demographics and clinical results differ significantly. Racial differences exist in both the medical problems of donors following living kidney donation and the acceptance of living donor KT. Furthermore, compared to patients with low socioeconomic status, individuals with high socioeconomic position are more likely to receive KT from a living donor and have reduced mortality rates. Therefore, actions are required to lessen KT inequalities and improve results. A significant obstacle to kidney transplant evaluation and follow-up care is access to transplant facilities. Patients with logistical, financial, or geographic obstacles have a hard time communicating with the transplant facility, and those with limited access run a higher risk of having unfavorable post-transplant outcomes. Telemedicine has the ability to improve access to transplant facilities and guarantee continuity of care following a transplant. Given the lowered regulatory and financial burdens brought on by the Public Health Emergency (PHE) declared by the US department of health and human services, the rapid adoption of telemedicine during the Coronavirus disease 2019 (COVID-19) pandemic has created both opportunities and challenges in the provision of remote medical care.

DESCRIPTION

Live video telemedicine consultations

A patient and a provider interact remotely *via* laptops, cellphones or tablets while using secure videoconferencing software and a steady internet connection in telemedicine *via* synchronous video encounters. The provider may be situated in an office or a clinic, whereas the patient may be at a neighborhood hospital or their home (originating location) (distant site). Regulations governing provider licensure and Health Insurance Portability and Accountability Act (HIPAA) requirements must be followed during these virtual encounters. By providing kidney transplant services to patients who find it difficult or expensive to travel to the transplant center, live video visits from a distance could remove the access barrier to transplant facilities.

Utilization of telemedicine by US transplant centers

Before the COVID-19 outbreak, US transplant hospitals were slow to utilize telemedicine. Major obstacles to the adoption of telemedicine include costs and reimbursements. Other obstacles limiting this technique are the constraints on the originating site. There have been initiatives to increase telemedicine access in general for low income patients, veterans, and those living in regions without adequate access to medical care. Additionally, the Bipartisan budget act of 2018 increased access to telemedicine for a number of patient categories, including those receiving home dialysis. However, state licensing requirements and insurer reimbursements continue to be key obstacles to the growth of telemedicine. Due to lax rules under the PHE and increased financing for telemedicine infrastructure through the Coronavirus Aid, Relief, and Economic Security (CARES) act, telemedicine was quickly adopted by US transplant centers with the start of the COVID-19 pandemic. In a national poll examining the early effects of the pandemic on US transplant centers, it was discovered that 96.8% had implemented telemedicine for the delivery of healthcare, although 81% had also acknowledged difficulties with it. Surprisingly, telemedicine has enabled transplant centers to continue pretransplant evaluations of renal failure patients and living kidney donor prospects as well as post-transplant continuity of care for both the recipient and donor despite the pandemic's challenges.

It will be crucial to investigate its impact on transplant outcomes as telemedicine is increasingly used to deliver transplant care. This covers post-transplant outcomes like acute rejection rates, rehospitalization rates, and graft and patient survival as well as outcomes that evaluate access to transplantation such rates and timeframes to waitlist and transplantation. Examining the impact of telemedicine on gaps in outcomes for people of color and those with little resources is particularly important. The impact of telemedicine on patient participation and cultural variations in patient's willingness to participate in virtual visits are two more research subjects that may be interesting.

Department of Nephrology, Targu Mures Medical Campus Hamburg University, Hamburg, Germany

Correspondence: *Jacek Rysz, Department of Nephrology, Targu Mures Medical Campus Hamburg University, Hamburg, Germany; Email: JohnstonEmma11@yahoo.com*

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CONCLUSION

By improving kidney transplant evaluation and follow-up treatment for the recipient and donor, telemedicine has the potential to have a long lasting effect on the field of KT beyond the pandemic. However, the development of kidney transplant services based on telemedicine is mostly reliant on telemedicine infrastructure, insurance policy, and state laws. In order to expand telemedicine practice and lessen KT inequities, federal and state legislation is required. Research studies are also required to evaluate the efficacy of telemedicine in KT. It is also possible to extrapolate the application of telemedicine in KT to other solid organ transplants.