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LETTER TO THE EDITOR

High-immunological risk living donor renal transplant during the COVID-19 outbreak: Uncertainties and ethical dilemmas

To the Editor:

We describe the challenges of performing a high-immunological risk living donor renal transplant during the coronavirus disease 2019 (COVID-19) outbreak.

A 42-year-old woman with end-stage renal disease from lupus nephritis had failed peritoneal dialysis due to pleuro-peritoneal leak, failed vascular access creation due to early thrombosis, and had recurrent dialysis catheter malfunction.

TABLE 1 Considerations for performing renal transplants during the coronavirus disease 2019 (COVID-19) viral pandemic

Uncertainties	Proceeding with transplant	Deferring transplant
Evolving novel pathogen pandemic Severity, extent, trajectory, and duration of the pandemic is unknown	• Risk of healthcare-associated, community-acquired or donor-derived infection • Potential adverse psychosocial effects due to heightened infection control measures for recipients (eg, social distancing, prolonged isolation)	• Risk of healthcare-associated (eg, dialysis center) or community-acquired infection • Adverse medical and psychosocial effects from prolonged dialysis (eg, recurrent dialysis access-related complications) • Loss of access to transplantation may be prolonged, with risk of exclusion from transplantation due to disease progression or death • Poorer posttransplant outcomes with prolonged duration on dialysis
Impact of COVID-19 in different population groups (eg, transplant vs dialysis patients)	• COVID-19 may be more severe and potentially fulminant in transplant recipients, especially those with a higher net state of immunosuppression	• Dialysis patients with medical comorbidities are likely also significantly vulnerable to severe COVID-19
Treatment and prophylaxis options not established	• Therapeutics for trial purposes or compassionate use may exclude transplant patients • Risk of drug-drug interaction, especially with immunosuppressants • Reduction of immunosuppression to manage infection may put the graft at risk	• Therapeutics for trial purposes or compassionate use may exclude dialysis patients
Impact on healthcare resources	• Access to resources needed for transplantation may be disrupted • Transplant processes may compete for critical healthcare resources (eg, staff, medical supplies, and facilities) essential for pandemic response	• Access to existing dialysis facilities may be affected
Risks to donor/caregivers	• Risk of acquiring nosocomial COVID-19 in healthy individuals	• Caregivers may be as likely to acquire the infection in the community if widespread transmission occurs

The transplant from her husband was ABO incompatible and had positive B cell flow crossmatch with multiple donor-specific antibodies. Neither alternative donors nor paired exchange candidates were available. Priority access to deceased donors is limited and unpredictable.

Ethics approval for transplant was obtained in February 2020 just as limited local transmission was reported.[1] The pair decided to proceed after extensive discussions with a multidisciplinary team.

Hospital-wide infection control was enhanced since January 2020. COVID-19 cases and suspects are segregated and allocated dedicated radiology and operating resources.[2,3] Healthcare workers are required to report temperature twice daily, cease travel to affected countries, and don surgical masks in all clinical settings. In addition, COVID-19 cases or suspects are cared for by separate dedicated teams. The pair and their appointed caregivers were counseled on strict adherence to personal hygiene, social distancing measures, and travel restrictions. The recipient was nursed in a single room and allowed only one visitor. The pair required negative nasopharyngeal swabs for the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus and normal chest radiographs at 14 and 2 days before surgery.

On March 11, 2020, as desensitization was ongoing and just 1 week before surgery, the World Health Organization declared a global pandemic. Our immunoadsorption column supply was threatened due to export restrictions on medical supplies. Their caregivers, who were relatives from Malaysia, arrived just before border closures. Nonetheless, transplant surgery proceeded successfully with immediate graft function after methylprednisolone and thymoglobulin induction. She was maintained on prednisolone, mycophenolic acid, and tacrolimus and was discharged on postoperative day 9.

To avoid overcrowding, nonurgent outpatient visits are generally deferred or conducted by phone. Patients are advised to perform blood sampling at nonpeak hours. The recipient is isolated in a clinic room after blood sampling before early review by her physician. Changes in her management are communicated by phone after her test results return if indicated. Both donor and recipient remain well 4 weeks posttransplant. As her condition stabilizes, some reviews will be performed via video conferencing.

The considerations for transplantation during this pandemic are complex. Most transplantation bodies have suggested deferring nonurgent transplants and many healthcare systems are overloaded. However, with the pandemic expected to be protracted, transplants for patients with life-threatening indications, such as malignancies, lung or heart transplants, and renal patients with risk of complete access failure cannot be deferred indefinitely. The risks of remaining on dialysis for a prolonged duration also need to be considered.

We mitigated the risk of peritransplant COVID-19 through diagnostic tests and stringent infection control measures. With increasing local community transmission, the risk of posttransplant COVID-19 cannot be eliminated. Acquiring COVID-19 during a state of profound immunosuppression may be devastating as emerging evidence suggests that immunocompromised patients are more likely to suffer severe complications.[4] Moreover, there is no established treatment nor prophylaxis. Reducing immunosuppression for the management of COVID-19[5] will entail significant risk of rejection. Unexpected disruptions to medical resources may also affect transplant care.

Performing transplantation during a viral pandemic will continue to be challenging. Precautions to mitigate COVID-19 transmission must be undertaken, and adequate healthcare resources must be secured before proceeding. Patient engagement is important, and we provide a possible framework for discussion (Table 1).

KEYWORDS

clinical decision-making, clinical research/practice, ethics, ethics and public policy, infection and infectious agents – viral, infectious disease, kidney transplantation/nephrology

DISCLOSURE

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Quan Yao Ho[1,4]
Shimin J. Chung[2,4]
Valerie H. L. Gan[3,4]
Lay Guat Ng[3,4]
Ban Hock Tan[2,4]
Terence Y. S. Kee[1,4]

[1]*Department of Renal Medicine, Singapore General Hospital, Singapore, Singapore*
[2]*Department of Infectious Diseases, Singapore General Hospital, Singapore, Singapore*
[3]*Department of Urology, Singapore General Hospital, Singapore, Singapore*
[4]*SingHealth Duke-NUS Transplant Centre, Singapore, Singapore*

Correspondence
Quan Y. Ho
Email: ho.quan.yao@singhealth.com.sg

ORCID

Quan Yao Ho https://orcid.org/0000-0002-0884-7076
Shimin J. Chung https://orcid.org/0000-0002-5174-7361

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