

Renal Transplant Guidelines with Reference to COVID-19 Infection

Abstract

Development of COVID-19 pandemic has affected organ transplant activity significantly. To start with, government of India had advised stoppage of “elective” surgeries so as to cope with resources and manpower for COVID-19 patients. As majority of hospitals are having both COVID and Non-COVID patients, there is obvious fear of cross-infection. Also, transplant patients being immunocompromised, there is higher risk of acquiring COVID-19 infection along with atypical presentation and unpredicted course of the disease. Result was that across India, elective living related kidney transplant came to a halt. Cadaver renal transplant, being emergency in nature still done, though very few. With passing time, once it became clear that pandemic is not going to be controlled sooner, need has been felt to restart renal transplant activity. Keeping various issues in mind in relation to elective living related renal transplant and emergency deceased donor renal transplant, these guidelines have been framed to help transplant professionals for restarting renal transplant program again in the country, while keeping both health care workers and patient safe.

Keywords: COVID-19, guidelines, renal transplant

These guidelines have been prepared by COVID-19 Working Group of Indian Society of Nephrology and endorsed by the Indian Society of Organ Transplantation (ISOT). In view of the rapidly changing scenario of COVID-19 infection, these guidelines may be revised/updated from time to time.

Organ transplant recipients are at a risk for more severe COVID-19 if they get SARS CoV-2 viral infection. Further, there is a potential risk of infection transmission from the donor to recipient through organ transplantation. Also, there are issues in recipient and donor selection for transplant. In view of these issues’ organ transplants at the time of COVID-19 pandemic should be undertaken with caution and should be done only at the center where facilities of management of COVID-19 patients are available.

1. The pre, peri, and posttransplant areas, including the operation theaters need to be specifically ear-marked for this purpose
2. Staff involved in the care of transplant patients must not be involved in the care of other patients

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3. There has to be adequate availability of personal protective equipment (PPE) for the care of these patients
4. The center should not be the one ear-marked for the treatment of COVID-19 patients and needs to have protocols for patient movement around the hospital to prevent the nosocomial acquisition of COVID.

Deceased Donors Transplants

Following individuals, having any of the following criteria, who are potential deceased donor should NOT be accepted as deceased donors:

- a. Epidemiological criteria –
 - International travel in the last 14 days before the onset of current event leading to brain stem death
 - Contact in last 14 days before the onset of current event leading to brain stem death with a confirmed case of COVID-19 or a health care worker with direct patient contact
- b. Clinical criteria –
 - Where the cause of death was due to unexplained respiratory failure
 - Where there was a history of fever or acute respiratory infection (e.g., shortness of breath, cough, and sore throat) with or

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without fever.

- Severe bilateral community-acquired pneumonia in the absence of any other cause.
- c. Laboratory criteria -
- Confirmed COVID-19 positive case or test found positive while donor work-up is being done.

Routine testing of deceased donors

Routine COVID-19 (SARS-CoV-2) viral testing should be undertaken in all potential deceased donors within 72 h prior to donation, both for assessment of donor fitness as well as for improving the safety of staff involved in transplantation

Even though the potential deceased donor is fit to donate organs, every hospital and organ transplant system must balance between the care of other COVID-19 positive patients in their health care setting against the organ transplant vis-a-vis availability of resources for safely conducting the organ transplant.

Living related Transplants

The living donor transplant program may be temporarily suspended in line with the Ministry of Health and Family Welfare (MoHFW)'s advisory for Hospitals and Medical Institutions dated 3rd March 2020, accessible at <https://www.mohfw.gov.in/pdf/AdvisoryforHospitalsandMedicalInstitutions.pdf>

However, if transplant is being done in view of the emergency medical need of recipient, following individuals, who are living donor should NOT be accepted as donors:

- a. Epidemiological criteria –
 - International travel in the last 14 days
 - Contact in last 14 days with a confirmed case of COVID-19 or a health care worker with direct patient contact
- b. Clinical criteria –
 - History of fever or acute respiratory infection (e.g. shortness of breath, cough, sore throat) with or without fever
- c. Laboratory criteria -
 - Confirmed COVID-19 positive or test found positive while donor work-up is being done.

Reverse transcription-polymerase chain reaction (RT-PCR) test of potential donors should be undertaken as suggested for deceased donors

Emergency life-saving Transplantation

In case a transplant is to be done due to the emergency need of the recipient, it should be performed with the appropriate assessment of COVID-19 infection in the recipient. Further, appropriate counseling of both the donor and recipient as well as their families should be done,

and a high-risk informed consent should be taken before proceeding with the transplant.

Transplantation Recipients

Similar to the general population, transplant recipients should also strictly follow the travel advisories issued by the various ministries of the Government of India from time to time. They should take extra precaution as they have a risk of developing severe COVID-19 disease, if they acquire SARS CoV-2 viral infection.

Transplant Recipients Returning from Abroad

All transplant recipients who have been exposed to a confirmed or suspected COVID-19 patient within the last 14 days or who have returned from nations with COVID-19 outbreaks should undergo quarantine and isolation for 14 days and should be tested for SARS CoV-2 infection.

If any transplant recipient has fever, cough, or breathing difficulty, they should immediately call their respective transplant centers. All transplant centers must have guidelines in place specifying which patients need testing and inpatient management and which patients can stay at home with close follow-up with various means like mobile and email etc.

If they are advised to visit the hospital, they should wear a mask while coming to hospital premises. In case of a medical emergency like difficulty in breathing, they should report to the nearest emergency department.

Treatment and modification of immunosuppression

There are two issues of management of organ transplant patients with COVID-19

- a. Management of COVID-19 in the transplant patient

There is a scarcity of data and consensus on effective treatments of COVID-19 as such and more so in transplant patients. Few centers have tried antivirals, hydroxychloroquine, and macrolides in COVID-19 patients with variable results. However, as of now, there is no treatment approved by the Central Drugs Standard Control Organization (CDSCO) or the Foods and Drug Administration (FDA) for COVID-19
- b. Handling of immunosuppressive medicines with COVID-19

There is no consensus regarding modification in the immunosuppressive regimen of transplant recipients with COVID-19. The dose adjustment has to balance the infection control and the organ rejection. However, there is an overall agreement of stopping antimetabolite drugs and decrease calcineurin inhibitors by 50%. Steroids should be continued on same doses. (Massachusetts General Hospital COVID-19 Treatment Guidance).

Posttransplant follows up Measures

Transplant patients are at risk for severe COVID 19 if they acquire infection due to their immunosuppressed state. They may not manifest symptoms like the general population. Fever may be absent as reported from a study from China. Transplant units are advised to consider ways to limit hospital attendance for patients, such as:

1. Rescheduling nonurgent out-patient appointments
2. Virtual or telemedicine or telephonic appointments
3. Home delivery of immunosuppression if feasible.

Patients with stable graft function and adequate drug supply can avoid routine follow-up visits to transplant hospitals.

Tissue Transplantation

At present, there is no evidence to suggest the transplant of coronaviruses by blood transfusion.

Tissue and Eye Donation Criteria

The deferral will be based upon infection status in the last 28 days before donation:

- Positive test for COVID-19
- Symptoms consistent with COVID-19 infection (e.g., unexplained fever, cough, shortness of breath) in a patient with suspected COVID-19 infection
- Donor defined as a person under investigation (PUI)
- Fever with severe acute lower respiratory illness (e.g., pneumonia, ARDS).

Additionally, the deferral will be based upon exposure in the last 28 days before donation:

- Close contact with a person who has confirmed COVID-19
- Close contact with a person under investigation (PUI) for COVID-19
- International travel.

Personnel Precautions working in the program

The health and safety of all the health care workers in the transplant program is of paramount importance. Transplanting hospitals are advised not to expose any of their staff if there is even the slightest risk of virus transmission from both epidemiological and clinical criteria.

It is likely that this pandemic may require the current resources to be utilized elsewhere, hence there is even more reason to practice caution when deciding on proceeding with donation and transplantation. It is with this in mind that all elective live living kidney and liver transplant should be postponed.

General principles for handling SARS CoV-2 infection in a transplant center

1. Personnel should follow all hospital-based protocols for the isolation and management of COVID-19 patients
2. Any questions or concerns about the infectious status of a potential donor should be referred to your medical director/organ sharing body for further guidance
3. If a donor is being ruled-out due to hospital considerations, local or national health authorities be sure to record the information. It is important that this information must be documented clearly and accurately. Documentation should include transmittable disease status, COVID-19 testing status/high-risk suspicion and/or individual organ suitability
4. Screening questions should reflect updated COVID-19 national guidelines.

Please refer to below links for more information:

- Coronavirus (SARS-CoV-2) causing COVID-19: Information for donation and transplant professionals Version 1 dated 18-3-2020 – BY Donate Life & The Transplant Society of Australia & New Zealand
- <https://tts.org/23-tid/tid-news/657-tid-update-and-guidance-on-2019-novel-coronavirus-2019-ncov-for-transplant-id-clinicians>
- <https://www.mohfw.gov.in/pdf/AdvisoryforHospitalsandMedicalInstitutions.pdf>
- <https://www.fda.gov/emergency-preparedness-and-response/mcm-issues/coronavirus-disease-2019-covid-19#fastfacts>
- <https://www.gaeba.org/2020/alert-coronavirus-2019-ncov-and-ocular-tissue-donation/>
- Guidelines for Liver Transplantation and COVID-19 Infection, as received from the President, Liver Transplant Society of India (LTSI) via official correspondence on 23-03-2020.

Disclaimer

The current outbreak is unpredictable. If widespread community-transmission occurs, health care infrastructure and capacity issues may have a further impact on donation and transplantation. These recommendations may require regular update to account for the changing epidemiology and new information regarding the treatment and testing. All transplant units must be aware of national and local guidance for managing patients with COVID-19.

No suit or legal proceedings shall lie against any person for anything done or intended to be done in good faith under this suggestions/advisory unless proved otherwise.