A Structured Telemedicine Model in the Management of COVID-19 Infected Kidney Transplant Patients in a Tertiary Care Center in India

Sir,

The coronavirus disease 2019 (COVID-19) pandemic brought many complexities for kidney transplant recipients (KTRs) as travel restrictions and economic slowdown hampered healthcare access. Even though 65% of India's population dwell in rural areas far-flung from a tertiary healthcare facility, the country ranks second in active internet users with a cyberspace penetration rate of 50%.[1,2] We exploited the aforementioned and formulated a telemedicine-based, triage-coded management of COVID-19 positive KTRs from our center (as a pivot) to address the challenges of poor accessibility to local healthcare resources.

During the second wave of the COVID-19 pandemic between April 1 and May 31 2021, we managed 49 KTRs with COVID-19 infection from different states, as far as 2,500 km from the pivot centre using telemedicine. We established a 24/7 telephone line for COVID-positive KTRs and disseminated the number through the patient support groups (mainly through WhatsApp). After the initial contact, including a video consultation, patients were evaluated and partook immunosuppression adjustments framed by an expert panel: Nephrologists and Infectious disease physicians of our hospital [Figure 1]. The patients were colour triaged with red and yellow, denoting severe and moderate disease, respectively, requiring hospitalization. Domiciliary-care KTRs with mild disease, asymptomatic infection, and recovering patients (restarted on immunosuppression) were coded as green and were managed at home. The consults were done daily and if the clinical profile required, even more frequently. Patients who did not have a referral COVID center nearby, who were elderly, and whose clinical evaluation suggested a poor outcome were called up for admission even with the slightest deterioration. Twenty-nine (59. 18%) patients were managed entirely on domiciliary care and seven (14. 30%) patients with a deteriorating clinical state underwent treatment in our center. In five (10. 20%) patients admitted elsewhere in a local COVID-care center, we supervised the clinical care distantly using telemedicine. While there were four deaths (8.16%), 44 (89·79%) patients improved on follow-up.

Using the telemedicine-based triage-coded model, we provided remote healthcare access to COVID-19 positive KTRs, addressing the challenges of distant travel and hospital visits and provided value-based clinical care. The video consults provided a decorous platform to watch the patient (and circumambience), understand their body language, and facilitate a well-informed clinical impression in contrast to a simple telephonic audio consult.[3] Video consults covered other aspects such as patient reassurance, mitigation of undue fear, dissuasion from unproven remedies, diet, and hydration during this illness. Consequent to the COVID-19 pandemic, telemedicine is successfully used to manage KTRs globally and holds promise in resource-limited settings.[4,5] We acknowledge that optimal utilization of telemedicine in managing sicker patients obligates the engagement of local healthcare

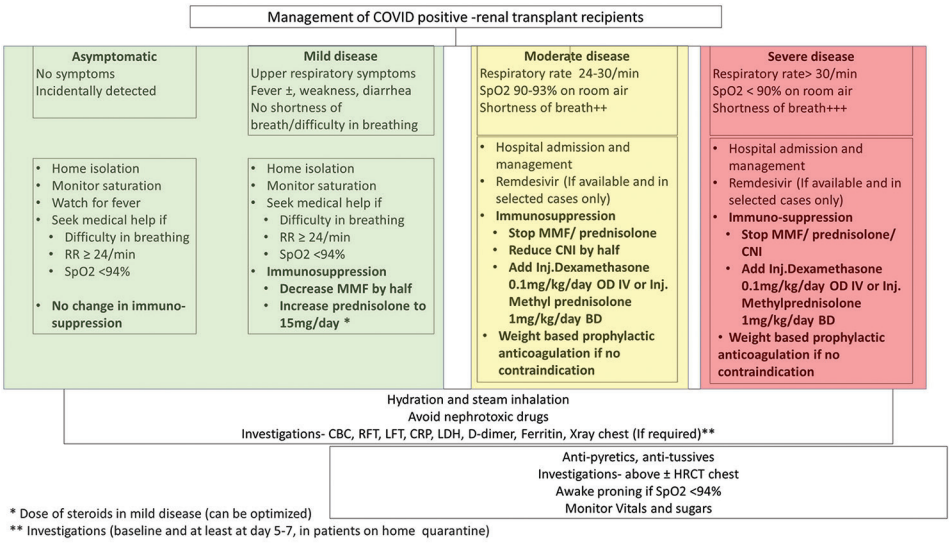

Figure 1: Protocol for management of COVID positive-renal transplant recipients. Abbreviations- Respiratory rate, MMF: Mycophenolate Mofetil, CNI: Calcineurin inhibitor, CBC: Complete blood count, RFT: Renal function test, LFT: Liver function test, CRP: C-reactive protein, LDH: Lactate dehydrogenase, oxygen saturation level (SpO2)

personnel. We currently use the same framework to deal with vaccine scepticism in our KTRs. With many kidney patients in India travelling over 1,000 km to receive kidney transplantation and post-transplant care, the current model makes a compelling and convincing argument favouring telemedicine in dispensing routine clinical care of KTRs in resource-limited nations.

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Conflicts of interest

There are no conflicts of interest.

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