

A Message from our Medical Directors at Natera, Inc

Dear Transplant & Nephrology Providers,

As we ride the waves of this pandemic, we recognize the value of a strong community of practice to provide assurance to our first-line workers, care teams and patients by learning from each other and incorporating the latest for continued safe, effective care.

The reality is that the COVID-19 pandemic has been particularly challenging for kidney transplant recipients (KTR) who are immunocompromised and as a result, highly anxious. A recent review examined the outcomes of 420 adult KTR with confirmed COVID-19.¹ The statistics in this study are concerning¹: 93% of the patients required hospitalization, 30% of whom required intensive care. Further, 44% had acute kidney injury (AKI) and 23% needed renal replacement therapy (RRT). In the study, 22% of these patients had died, and another 19% of patients were still in the hospital at the time of publication.

Even with patients who contracted the COVID-19 virus, the acute kidney injury (AKI) may result from a number of factors. An early study in non-transplant patients showed that the SARS-CoV-2 virus can directly infect kidney tissue and induce acute tubular damage.² Even renal damage due to an uncontrolled cytokine storm has been postulated.³ In the Marinaki et al review, 58% of patients had immunosuppression reduced or stopped, and therefore acute rejection must be considered as a cause of some of the cases of AKI.¹ Finally, a rapid-collapsing variant of focal segmental glomerulosclerosis (FSGS) has been described in both native and transplant kidneys in association with COVID-19, particularly in patients with apolipoprotein L-1 (APOL-1) risk alleles.⁴

Thus, there exists an unmet need to accurately and non-invasively surveil kidney transplant recipients for rejection when their immunosuppression is reduced or stopped.

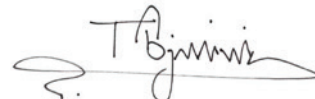
Natera's donor-derived cell-free DNA (dd-cfDNA) test, Prospera, is ideal for this. Additionally, Natera's new broad-based renal genetics panel, Renasight, includes the APOL-1 risk gene, so you may identify patients at higher risk of nephropathy during a COVID infection.

Based on our experience of performing over two million cfDNA tests across women's health, oncology and organ transplantation, we continue to learn and optimize our own tests. As such, we want to share our ongoing learnings so we can together overcome the challenges to our discipline at this critical time.

Sincerely,



Phil Gauthier, MD MBA
Medical Director, Organ Transplantation
Natera, Inc
pgauthier@natera.com



Hoss Tabriziani, MD
Medical Director, Organ Transplantation
Natera, Inc
htabriziani@natera.com

References:

- 1 Marinaki S, Tsiakas S, Korogiannou M, et al. A Systematic review of COVID-10 infection in kidney transplant recipients: A universal effort to preserve patient's lives and allografts. J Clin Med 2020; 9: 2986; doi:10.3390/jcm9092986
- 2 Diao B, Wang C, Wang R, et al. Human kidney is a target for novel severe acute respiratory syndrome coronavirus 2. <https://doi.org/10.1101/2020.03.04.20031120>
- 3 Tisoncik, J.R.; Korth, M.J.; Simmons, C.P.; Farrar, R.J.; Martin, T.; Katze, M.G. Into the Eye of the Cytokine Storm. Microbiol. Mol. Biol. Rev. 2012, 76, 16–32
- 4 Noble R, Tan MY, McCulloch T, et al. Collapsing glomerulopathy affecting native and transplant kidneys in individuals with COVID-19. Nephron 2020; 144:589-594 DOI: 10.1159/000509938.