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COVID-19 pandemic in limited-resource countries: Strategies for challenges in a dialysis unit

South and South-East Asian countries are densely populated regions with inadequate health-care infrastructure. The rapid surge of novel coronavirus disease 2019 (COVID-19) pandemic has brought unique challenges. We describe our solutions for these challenges in a limited-resource setting.

Our unit is a tertiary referral centre with 30 haemodialysis stations. In addition to stable patients, around 10 cases of advanced renal failure with symptoms camouflaging severe acute respiratory illness are admitted daily. In the absence of universal testing, apprehensions related to inadvertent exposure to COVID-19 positive patient was increasing among health-care workers (HCW) and patients, which was crucial to be addressed to maintain functionality of the unit. A risk stratification algorithm after inadvertent exposure to COVID-19 positive patient was adapted from the U.S. Centers for Disease Control and Prevention (CDC) to educate HCW.^{1,2} A flow-chart simplified the interpretation of CDC tables for risk stratification which were found intricate by HCW. HCW were asked to lead, screen patients and discuss to ensure confidence building and transparency. Inculcation of "leadership quality" to frontline dialysis HCW constantly motivated them to function without any fear. Universal masking, hand hygiene and separation of adjacent dialysis stations by 2 m was done.¹ Of the two operating rooms, one was converted to COVID isolation room. Creation of a proper doffing area was consequential to sacrificing one of the two waiting areas. They were in proximity to each other.

In the context of shortage of testing kits and urgent need for dialysis, exclusion of COVID-19 infection was impossible in patients presenting with volume overload. Suspected cases of COVID-19 were presumed to be positive cases until proven otherwise and dialysed in COVID isolation room with full precautions. For rest of the patients, we upgraded our personal protective equipment kit to include eye protection, N95 mask, and a plastic apron in addition to the usual cotton gown, gloves, cap and shoe covers. We managed supply gaps with indigenous tricks like in-house creation of visors by 3D printing and plastic overhead projection sheets.



Common diseases could be masked by COVID-19. This was reflected in a patient on chronic haemodialysis with confirmed

COVID-19, who was later diagnosed with pulmonary tuberculosis as he failed to improve despite being COVID-19 negative on day 14 of admission. This case highlights the need for raising our guard for evaluation of common diseases in a COVID-19 positive patient, especially tuberculosis in our settings.

With the practice mentioned above, none of our dialysis patients and HCW were affected by COVID-19 over the last 3 months wherein 1500 haemodialysis sessions were given to 110 patients. This included 27 COVID-19 suspected patients, of whom 2 turned positive later, and 6 confirmed COVID-19 positive patients.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

Joyita Bharati
Raja Ramachandran 
Vivek Kumar
Harbir Singh Kohli 

Department of Nephrology, Post Graduate Institute of Medical Education and Research, Chandigarh, India
DOI 10.1111/nep.13748

ORCID

Raja Ramachandran  <https://orcid.org/0000-0002-1273-9107>
Harbir Singh Kohli  <https://orcid.org/0000-0003-4806-2297>

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