

COVID-19 Infection among Dialysis Patients and Staff

By August 2021, the coronavirus disease 2019 (COVID-19) pandemic has affected more than 219 million people and has resulted in more than 4.5 million deaths.^[1] Fever, cough, and fatigue are the most common symptoms reported in 98%, 76%, and 70%–80% of cases, respectively. More than 80% of patients have a mild to moderate disease and 15% to 20% develop severe/critical disease requiring hospitalization. Prevalence and severity of COVID-19 increases with age and the presence of comorbidities such as diabetes, cardiovascular diseases, and cancer.^[2]

Dialysis patients are vulnerable because they are immunocompromised; more than 90% have one or more comorbidities, most of them fall into higher age group and have repeated exposure to the hospital environment. Data of 65 dialysis centers in Wuhan, China, between January and March 2020 revealed that 154 of their 7,154 dialysis patients (2%) acquired got an infection, with 23% developing severe/critical disease. Fever was the presenting feature in 51%, and 21% remained asymptomatic.^[3] A study compared 47 COVID-19-positive hospitalized dialysis patients with 52 hospitalized controls and found a lower incidence of fever (47% vs. 90%), cough (49% vs. 70%) and fatigue (59% vs. 83%) among dialysis patients. The authors also observed that these patients had lower lymphocyte count, higher bilateral (82% vs. 69%), and lower unilateral lung involvement on computed tomography (CT) scan (10% vs. 27%, $P = 0.03$), higher need for noninvasive ventilation (25% vs. 6%, $P = 0.008$), higher rates of acute respiratory distress syndrome, arrhythmias, and mortality (14% vs. 4%).^[4] Recent data suggests that dialysis patients are five to 20 times more vulnerable to develop the disease and carry 16% to 32% mortality.^[5]

Many dialysis units in India, besides the laid-down guidelines by the Indian Society of Nephrology and the Centers for Disease Control and Prevention (CDC),^[6,7] have devised their own preventive strategies. Some of these measures are routine use of Level 3 PPEs by all dialysis staff, universal and periodic testing of dialysis population and staff with reverse transcription–polymerase chain reaction RT-PCR (every 1–3 weeks), hydroxychloroquine prophylaxis, and so on.

In this issue of *IJN*, there is a report on COVID-19 prevalence from nine dialysis centers in Mumbai. All 705 dialysis patients and 103 dialysis staff of these centers were tested over a time span of 54 days by RT-PCR. The study found that 7.1% of patients and 14.6% of staff members were COVID-19 positive. The majority of the patients were asymptomatic, and only 26% were symptomatic; however, mortality rate was 18%. When tested for

antibodies 2 months later, 16% (12/74) additional patients and 37% (27 of 73) staff members after the initial RT-PCR had developed antibodies; suggesting recent subclinical infection.

It should be kept in mind that the prevalence of COVID-19 is “period prevalence” and logically varies with the duration of the study period. Studies with longer study periods would have higher prevalence. We compiled data from four dialysis centers from Delhi/NCR (National Capital Region) where testing was done only if patient had symptoms or history of contact. Over an 8-month period, 122 of 1,009 (12%) dialysis patients and 15.3% dialysis staff (22/143) tested positive. There was no mortality among staff, but high mortality of 20.9% (28/122) was observed among patients

Three points from this study merit discussion: (1) The study shows that dialysis patients behave largely like healthy population, as 74% patients were asymptomatic and got picked by routine testing only. Therefore, regular screening, high index of suspicion for atypical features, and low threshold for testing are desired. (2) During antibody testing, 2 months after the first evaluation, additional 16% patients and 37% staff tested positive despite isolation/hospitalization of positive-tested patients. This only shows the ongoing community spread and the importance of subclinical infection and asymptomatic carrier state in the propagation of the disease. This emphasizes the need for a stringent preventive strategy. (3) The most important point of this study that needs comment is on the universal screening for COVID-19 infection. One has to understand that a universal test can only give “point prevalence” of disease, which in an ongoing pandemic keeps changing every day. This strategy needs to be condemned. The authors themselves find that 2 months later, more patients and staff had developed antibodies than those tested positive for COVID-19, thereby negating the philosophy of universal testing. I have a firm opinion that only symptomatic/suspected patients need to be tested rather than everyone. In a setting of the ongoing pandemic, we achieve nothing by universal screening as this figure is dynamic.

Some centers have used CT screening rather than RT-PCR because of high sensitivity and quick results. However, such strategies can only be recommended in the setting of an outbreak.^[8] Therefore, in the existing scenario, testing of only symptomatic patients as suggested by ISN and CDC seems logical.

One can infer from this study that in today’s difficult times, strict observance of universal precautions – wearing N95 masks, eye protection, wearing of gowns/PPE (personal

protective equipment), social distancing, observance of cough etiquettes, and frequent handwashing – remains the mainstay to fight this disease. This high-risk group is being prioritized for vaccination but we are still gathering data on its response rate and effective schedule.

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References

1. WHO Coronavirus Disease (COVID-19) Dashboard. Data updated 20/02/2020.
2. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, *et al.* Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet* 2020;395:497-506.
3. Xiong F, Tang H, Liu L, Tu C, Tian J-B, Lei C-T, *et al.* Clinical characteristics of and medical interventions for Covid 19 in Hemodialysis patients in Wuhan, China. *J Am Soc Nephrol* 2020;31:1387-97.
4. Wu J, Li J, Zhu G, Zhang Y, Bi Z, Yu Y, *et al.* Clinical features of maintenance hemodialysis patients with novel Coronavirus-infected pneumonia in Wuhan, China. *Clin J Am Soc Nephrol* 2020;15:1139-45.
5. Francis A, Biagent C, Ikizlar TA, Cockwell P, Jha V, The urgent need to vaccinate dialysis patients against severe acute respiratory syndrome coronavirus 2: A call to action. *Kidney Int* 2021;99:791-3.
6. Lobo V, Khanna U, Rajapurkar M, Mahapatra HS, Verma H, Prasad N, *et al.* On behalf of Indian Society of Nephrology. Guidelines for Dialysis with reference to COVID-19. *Indian J Nephrol* 2020;30:166-70.
7. CDC general practice recommendations from: <https://www.cdc.gov/coronavirus/2019>.
8. Wang H. Maintenance hemodialysis and coronavirus disease 2019 (COVID-19): Saving lives with caution, care, and courage. *Kidney Med* 2020;2:365-6.

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