

CONFLICT OF INTEREST

The authors declare no potential conflict of interest.

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The Omicron COVID-19 threat to dialysis patients is dramatically lower than previous variants

Sir/Madam,

In 2021, we reported the mortality of the first waves of COVID-19 in dialysis patients,¹ and on the antibody efficiency of the SinoPharm vaccine in this patient group.² Whilst spike antibody levels were sufficiently induced in ~50% of patients after a primary course, we saw an increment in antibody levels in most patients. Nevertheless, we subsequently ensured that all dialysis patients were offered a booster shot to improve antibody levels in those with an inadequate antibody result. The efficacy of the SinoPharm vaccination was well demonstrated in a normal population,³ and this undoubtedly helped prevent death during the delta variant wave in dialysis patients. In the UAE, we have experienced four waves of COVID disease in dialysis patients, and the last wave has affected more patients. We have variant typing information on the last two waves in the community which were largely Delta (B.1.617.2) and Omicron (B.1.1.529) variants of COVID-19, and we assume that the first two were Alpha (B.1.1.7) and Beta (B.1.351), respectively, but do not have genotypic confirmation of the latter. In spite of nearly 100% uptake of vaccination and booster doses, the scale of this infection exceeded previous waves in terms of numbers and rapidity of infection, and this stretched our isolation capacity. However, it was clear that most of such patients experienced mild disease. The median ages of infected individuals (IQR) of each of the four waves was 53 (45–61), 59 (46–68), 55 (42–67), 53 (43–66) years ($p = ns$). To date, no dialysis patient has died from COVID or its complications in the recent Omicron wave (Figure 1), with the instantaneous case fatality ratio (case related mortality/cases %) shown in vaccinated,

unvaccinated and overall, in patients. This is seen to drop dramatically in the latest wave because of the lack of overall lethality. Given that the previous waves were associated with multiple hospitalisations and sadly some deaths, we were concerned that this recent wave would be associated with similar issues. However, whilst the Omicron variant was associated with increased infectivity, it appeared dramatically less dangerous in SinoPharm vaccinated dialysis patients. There is little data available on the efficacy of this vaccine on this variant in preventing severe disease.⁴

Explanations for this observation include an almost fully vaccinated dialysis population, survivor effects (but there was no clear difference in the age of affected individuals) or a viral strain that produces considerably attenuated disease. Given the 36 mutations in the spike protein in the Omicron variant, antibody responses may have been very suboptimal to this variant⁵ and it is unlikely that SinoPharm vaccination prevented the acquisition of the virus. However, mortality and morbidity were strikingly attenuated, and we speculate that the vaccine may have induced a robust T-cell response to COVID-19 variants with mutations, like Omicron, to prevent severe complications in vulnerable groups. Additionally, the viral variant may simply be less pathogenic in the dialysis cohort.

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FIGURE 1 Graph showing the number of patients with active COVID-19 infection (solid line, right axis) and instantaneous case fatality rate (COVID related deaths/COVID PCR positive patients as percentage), in vaccinated (green, left axis), unvaccinated (red, left axis) and combined (blue, left axis). It can be seen that the CFR drops dramatically during the last wave of COVID infection. Where we have data on the variant, it is shown in boxes at the top along with the timing of our vaccination program

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