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A case of membranous nephropathy following Pfizer–BioNTech mRNA vaccination against COVID-19



To the editor: We read a recent report describing the relapse of membranous nephropathy (MN) following the administration of inactivated vaccine against coronavirus disease 2019 (COVID-19).¹ Here, we describe a case of new-onset MN following vaccination with the Pfizer–BioNTech mRNA-based COVID-19 vaccine.

A 70-year-old man with no significant past medical history was referred to our institution for generalized edema, which occurred a week after his first dose of the Pfizer–BioNTech vaccine and got worse a day after the second dose, which was given 3 weeks after the first dose. He denied other symptoms. On examination, his blood pressure was 155/86 mm Hg, and he

had bilateral pitting edema up to his thighs. Laboratory tests revealed a serum creatinine level of 114 $\mu\text{mol/l}$, an albumin level of 17 g/l, a total cholesterol level of 9.24 mmol/l, 17 red blood cells/ μl in urine analysis, and a 24-hour total urine protein level of 4.4 grams. Secondary causes, including drugs and infections (hepatitis B, hepatitis C, HIV), were excluded. He was found to have IgM kappa monoclonal gammopathy of undetermined significance. A thorough malignancy screening, including enhanced computed tomography of the thorax, abdomen, and pelvis, gastroscopy plus colonoscopy, and prostate-specific antigen testing yielded no significant results.

A percutaneous kidney biopsy was performed, and diagnosis of MN was confirmed. The results are shown in Figure 1.

Serum anti-phospholipase A2 receptor (PLA2R) was negative, and a kidney biopsy stained negative for PLA2R antigen as well. Serum thrombospondin type-1 domain-containing 7A (THSD7A) antibody was positive by indirect immunofluorescence assay. The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) spike protein antibody was 147.0 U/ml 3 months after his second dose of vaccine. The patient is currently being managed with irbesartan, frusemide, and warfarin. There are no signs of spontaneous remission after 2 months.

Our observation, together with other case reports of MN development post–COVID-19 infection,^{2,3} and MN relapse post–COVID-19 vaccine administration,¹ supports a possible immune dysregulation process causing loss of tolerance to certain podocyte antigens. Elucidation of this possibility requires further studies.

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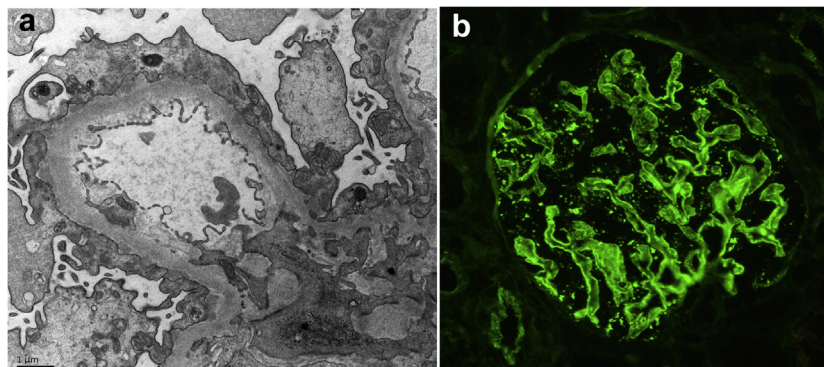


Figure 1 | (a) Electron microscopy. Glomerular capillary loops showed numerous small subepithelial electron-dense deposits. The overlying podocytes showed extensive foot process effacement. **(b) IgG immunofluorescence** showed diffuse 2+ finely granular capillary loop staining. To optimize viewing of this image, please see the online version of this article at www.kidney-international.org.

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Should vaccination against COVID-19 be mandated in patients on the transplant waiting list?



To the editor: Concordant studies report a very high mortality rate during coronavirus disease 2019 (COVID-19) infection in kidney transplant recipients (KTRs). The 30-day cumulative incidence of death is 18% in a French national cohort.¹ Another study reported a mortality incidence of 32% among KTRs hospitalized for COVID-19 infection.² Just as misfortunes never come one at a time, these patients, along with having vulnerability to infection, experienced a low rate of immunization after complete vaccination.^{3,4} Moreover, cases of severe COVID-19 occurring after complete vaccination have been reported in KTRs.⁵

By contrast, dialysis patients, even when older and frail, have a robust and sustained response to the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) vaccine.^{6–13} Even though hemodialysis patients may have significantly lower anti-SARS-CoV-2 S antibody titers than do healthy individuals,¹⁰ we reported that a third dose enhanced the humoral response in almost all patients.¹¹ Thus, it is possible that patients vaccinated after transplantation would have only a 1 in 2 chance of responding as expected to the vaccine.

Risks associated with mRNA vaccines are low. In randomized studies, the frequency of serious and severe adverse events (SAEs) was similar for vaccinated participants and those who received a placebo.¹³ A very recent study reports only 33 SAEs (0.005%) after 704,003 first doses of mRNA vaccine.¹⁴ In 7 studies, including 820 dialysis patients,^{6–13} no SAEs were reported. Although very low, the incidence of SAEs is obviously not zero. Nevertheless, this concern has to be balanced with the high morbidity and mortality incidence of COVID-19 in dialysis patients.¹⁵

A recent report indicated that 20% of hemodialysis patients were hesitant to seek out the COVID-19 vaccine.¹⁶ The proportion increased to 29% in patients aged 18–44 years. A majority of hesitancy was due to concerns about side effects. For these patients, the main source of information on the COVID-19 vaccine was television, and

not dialysis-center staff.¹⁶ Providing better information regarding vaccine safety is a major issue for physicians. It should be also noted that vaccine hesitancy is substantially reduced if the vaccine is offered at a dialysis facility. Thus, the role of dialysis centers is crucial in patient adherence to vaccination guidance.

Respect of personhood and autonomy of choice are fundamental principles of health care. The right to decline vaccination cannot be denied, but patients must know all consequences of their choice. Patients often perceive risks differently from physicians. Hesitant individuals consider that they are at low risk of COVID-19 infection while being at high risk of suffering adverse effects from the vaccine. Communication based on empowerment and trust should be brought to the forefront of the battle against the disease.

An open reflection and discussion about the issues of anti-COVID-19 vaccination for patients on the transplant waiting list are necessary to facilitate both patients' information gathering and decision-making and physician guidance of hesitant patients. Whether vaccination should be a prerequisite for referral to a waiting list is a difficult question to answer, and related issues regarding patients' rights, physicians' knowledge, and societal issues are intertwined, creating the dilemma we currently face.

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