Gross hematuria following vaccination for severe acute respiratory syndrome coronavirus 2 in 2 patients with IgA nephropathy

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To the editor: Several of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) vaccines use a nucleoside-modified, purified mRNA lipid nanoparticle-encapsulated platform. Compared with traditional inactivated viral and adjuvanted protein vaccines, this RNA platform elicits far higher neutralizing antibody titers, stronger antigen-specific cluster of differentiation (CD) 4^+ and $CD8^+$ T-cell responses, and stronger germinal center B and T_{FH} cell activation in experimental animals.[1] The activated $CD4^+$ and $CD8^+$ T cells produce several proinflammatory cytokines, including interferon-γ and tumor necrosis factor-α. This led us to wonder if these vaccines may activate or exacerbate immune-mediated glomerular diseases. Two individuals with biopsy-proven IgA nephropathy (IgAN) developed gross hematuria shortly following the second dose of the Moderna vaccine. The patients are described in Table 1. At baseline, both had proteinuria of <1 g/d and well-preserved kidney function. Several hours after the second dose of vaccine was given, both developed systemic symptoms, ranging from body aches, headache, and fatigue to fever and chills. Between 8 and 24 hours after systemic symptoms appeared, the patients noticed gross hematuria that resolved after 3 days. Serum creatinine did not increase, but proteinuria increased in 1 patient (Table 1). Although we did not expect an exacerbation of IgAN after a nonmucosal immune challenge, IgAN patients have previously been reported to have a stronger IgA1 (albeit monomeric) response to intramuscular influenza vaccine than healthy subjects.[2] These episodes of apparent IgAN exacerbation should prompt the nephrology community to closely follow their patients with glomerular disease after SAR2-CoV-2 vaccination to determine the frequency and consequences of vaccine-induced disease activation.

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Weak anti–SARS-CoV-2 antibody response after the first injection of an mRNA COVID-19 vaccine in kidney transplant recipients

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To the editor: International recommendations on coronavirus disease 2019 (COVID-19) vaccine distribution have given priority to immunocompromised patients, including kidney transplant recipients (KTRs).[1,2] Unfortunately, this guidance has been released without inclusion of this clinical population in vaccine clinical trials. In an effort to shed light on the efficacy and safety of an mRNA COVID-19 vaccine in KTRs, this preliminary study was undertaken to investigate

Table 1 | Patient demographics and clinical characteristics

Patient no.	Age, yr	Sex	Race	Year IgAN diagnosed	Treatment	Gross hematuria events during disease course	Persistent microscopic hematuria	Proteinuria in 2020, g/d	Proteinuria between SARS-Cov-2 vaccine doses, g/d	Proteinuria 3 weeks after last SARS-CoV-2 vaccine dose, g/d
1	38	F	W	2005	RAASi	At presentation; during 1 episode of gastroenteritis; occasionally after yearly influenza vaccine	Yes	0.63	0.82	1.40
2	38	F	W	2019	Cyc + Pred (6 mo), then RAASi	At presentation only	Yes	0.43	0.59	0.40

Cyc, cyclophosphamide; F, female; IgAN, IgA nephropathy; Pred, prednisone; RAASi, renin-angiotensin-aldosterone system inhibitor; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2; W, white.