QJM: An International Journal of Medicine, 2021, 735–736

doi: 10.1093/qjmed/hcab223
Advance Access Publication Date: 20 August 2021
Case report

CASE REPORT

IgA nephropathy flare-up following SARS-CoV-2 vaccination

T. Horino

From the Department of Endocrinology, Metabolism and Nephrology, Kochi Medical School, Kochi University, Kohasu, Oko-cho, Nankoku, Kochi 783-8505, Japan. email: horinott@yahoo.co.jp

Learning points for clinicians

While mRNA-based coronavirus disease 2019 (COVID-19) vaccines are effective in preventing COVID-19 infection, they have various adverse reactions. COVID-19 vaccines can cause flare-up in patients with IgA nephropathy. Clinicians should be aware that the underlying disease flare-up may occur after vaccination.

Case report

A 46-year-old Japanese woman presented to the nephrology clinic with high-grade fever, myalgia and macrohaematuria. After much scrutiny for haematuria and proteinuria 4 years before, a diagnosis of IgA nephropathy (IgAN) was established by performing a renal biopsy. Treatment with tonsillectomy and steroid pulse therapy 2 years before completely resolved her IgAN without relapse. She denied any symptoms after the first dose of Pfizer vaccine against coronavirus disease 2019 (COVID-19). However, she had high-grade fever, myalgia and macrohaematuria after 12 h of receiving the second dose of vaccine. The clinical data are shown in Table 1. Laboratory tests revealed marked proteinuria (urine dipstick: 3+) and haematuria (>100 cells/high power field) with normal serum creatinine. Despite the spontaneous resolution of fever and proteinuria within 2 weeks, microscopic haematuria persisted.

Discussion

Recently, Rahim *et al.*[1] reported a case of IgAN flare-up with gross haematuria after inoculation with Pfizer vaccine against COVID-19. Upper respiratory tract infections like acute tonsillitis worsen IgAN. Tonsillectomy with steroid pulse therapy is an effective treatment approach in such cases. In our case, despite undergoing tonsillectomy, transient glomerulonephritis was present. Furthermore, most adverse reactions of the mRNA-based COVID-19 vaccines are due to excessive cytokine production, specifically type I interferon (IFN-I),[2] owing to the ability of other mRNA vaccines to induce IFN-I.[3] Treatment of viral

Table 1. Clinical course of the patient

Patient characteristics	At the time of diagnosis	After 1 year	After first dose	After second dose	Two weeks after second dose
Symptoms	None	None	None	High-grade fever Myalgia Macrohaematuria	None
Treatment	Prednisolone	None	None	None	None
SCr (mg/dL)	0.53	0.52	0.53	0.55	0.53
Urine RBC (cells/HPF)	50	<5	<5	>100	20
Urine protein dipstick test	2+			3+	

HPF, high power field; IgAN, IgA nephropathy; RBC, red blood cell; SCr, serum creatinine.

Submitted: 15 August 2021

hepatitis with IFN-I injections may cause fever, headache and fatigue similar to the current COVID-19 vaccines, which are likely due to the transient IFN-I production, crucial to induce an effective immune response.[3] However, this has been reported to aggravate IgAN through IFN-α,[4] similar to our case.

Herein, we report a case of IgAN flare-up after 12 h of receiving the second dose of Pfizer vaccine against COVID-19. This study highlights the importance of post-vaccination monitoring in patients with a history of glomerulonephritis.

Consent

Informed consent was obtained from patient for the publication of this article.

Conflict of interest. None declared.

References

1. Rahim SEG, Lin JT, Wang JC. A case of gross hematuria and IgA nephropathy flare-up following SARS-CoV-2 vaccination. *Kidney Int* 2021; **100**:238.
2. Sprent J, King C. COVID-19 vaccine side effects: the positives about feeling bad. *Sci Immunol* 2021; **6**:eabj9256.
3. Cagigi A, Loré K. Immune responses induced by mRNA vaccination in mice, monkeys and humans. *Vaccines (Basel)* 2021; **9**:61.
4. Wardle EN. Is IgA nephropathy induced by hyperproduction of interferon-alpha? *Med Hypotheses* 2004; **62**:625–8.