

## [ LETTERS TO THE EDITOR ]

### Immune Thrombocytopenia Following COVID-19 Vaccination

**Key words:** thrombocytopenia, immune thrombocytopenia, COVID-19 vaccine

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*To the Editor* We read with great interest the article, ‘Severe Immune Thrombocytopenia after COVID-19 Vaccination: Two Case Reports and a Literature Review’ (1). We would like to highlight a case of immune thrombocytopenia (ITP) following the COVID-19 vaccination, we encountered in February 2021.

A 78-year-old Caucasian female presented with generalized body aches and a low-grade fever. She had occasional epistaxis and had noticed a pinkish tinge in her urine for the past two days. She had received her second dose of the Moderna COVID-19 (mRNA 1273) vaccine three days before the onset of symptoms.

Her medical history was significant for meningioma, transient ischemic attack, and recurrent episodes of sinusitis. There had not been recent changes to her home medications, recent hospitalization, or transfusion. There was no history of clotting or bleeding disorders or autoimmune disorders. She was a non-consumer of alcohol.

On an evaluation, she was hemodynamically stable. There was no skin rash, enlarged lymph nodes, or hepatosplenomegaly. Laboratory tests showed a platelet count of 3,000/ $\mu$ L of blood. The white blood cell count, hemoglobin level, coagulation profile, and liver and kidney tests were normal. Her last known normal platelet count was from one year earlier.

A peripheral blood smear showed a decreased number of platelets without schistocytes. HIV, Hepatitis A, Hepatitis B, and Hepatitis C were negative. The lactate dehydrogenase (LDH) value was normal, and the thyroid stimulating hormone (TSH) value was 1.88 IU/mL. Computed tomography scans of the chest, abdomen, and pelvis were normal.

The patient was given intravenous immune globulin (IVIG) and started on dexamethasone 40 mg daily for 4 days. Her platelet counts improved and normalized by the

fourth day of admission. She did not have any significant bleeding during her hospitalization.

Numerous hypotheses have attempted to explain vaccine-related immune thrombocytopenia. Thrombocytopenia may result from an immune response triggered in the lymph node following the entry of viral RNA into the dendritic cells after intramuscular injection. Alternatively, individuals may possess preformed antibodies, which trigger an immune response against vaccine particles attached to platelets, leading to a full-blown immune response against all platelets. Some reports have also described worsening of chronic borderline thrombocytopenia in patients with longstanding pre-existing ITP or hereditary thrombocytopenia due to a post-vaccine acute systemic inflammatory response, which leads to a decreased production or increased clearance (2).

At this juncture, we do not have enough evidence to attribute the development of ITP in our patient to the covid vaccine, although a causal association between ITP and vaccination is possible (3). Management of ITP entails the use of IVIG and steroids.

**The authors state that they have no Conflict of Interest (COI).**

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#### References

1. Shonai T, Kimura F, Watanabe J. Severe immune thrombocytopenia after COVID-19 vaccination: two case reports and a literature review. *Intern Med* 61: 1581-1585, 2022.
2. Lee EJ, Cines DB, Gernsheimer T, et al. Thrombocytopenia following Pfizer and Moderna SARS-CoV-2 vaccination. *Am J Hematol* 96: 534-537, 2021.
3. Tarawneh O, Tarawneh H. Immune thrombocytopenia in a 22-year-old post-COVID19 vaccine. *Am J Hematol* 96: E133-E134, 2021.

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