

Relapse of immune thrombocytopenia after COVID-19 vaccination

To the Editor:

Patients with immune thrombocytopenia (ITP) are worldwide offered vaccination against COVID-19, but these vaccines have been associated with thrombocytopenia.¹⁻⁶ We have conducted this pragmatic single-centre retrospective cohort study to assess whether COVID-19 vaccination induces relapses in patients with pre-existing ITP.

METHODS AND RESULTS

Between 1 July and 1 September 2021, all primary and secondary ITP patients who received a COVID-19 vaccination and agreed to participate received a telephonic questionnaire. Relapses (within four weeks after injection) were defined as observed (intensification of ITP treatment or $\geq 50\%$ fall in platelet count combined with worsening of bleeding symptoms) and possible (worsening of bleeding symptoms in the absence of available platelet counts). Increased bleeding symptoms (scored on a 5-point Likert scale: not at all, slightly, somewhat, very and extremely worsened) were considered present if the score was somewhat worsened or higher for any of the seven bleeding symptoms (overall, hematomas, petechiae, epistaxis, gum bleeding, heavy menstruation or 'other' bleeding). Platelet counts were available on indication, on the patient's initiative, or if a routine visit was planned by chance. A change in platelet count was calculated by comparing the lowest available platelet count after injection with the most recent count before the injection (for the second injection, only platelet counts measured later than the first injection were considered).

Eighty five ITP patients were included (mean age 48 ± 17 years, 53% female, 82% primary ITP, median ITP duration 7 (interquartile range (IQR): 3-16) years). The median time between the

last available platelet count and the first injection was 29 (IQR: 7-130) days.

After the first injection ($n = 85$), 8% had a relapse (2 observed, 5 possible). In one of the observed relapses, the ITP treatment was intensified. Within the patients who experienced increased bleeding ($n = 10$), 20% had a fall in platelet count of $\geq 50\%$ (Figure 1A; two out of five (40%) patients who obtained platelets counts). This 20% was significantly more often than the 1% in patients without bleeding ($n = 75$; $P = .04$). After the second injection ($n = 81$), 4% had a relapse (1 observed, 2 possible). A fall in platelet count of $\geq 50\%$ occurred as frequently in patients with ($n = 3$) and without ($n = 78$) increased bleeding (0% versus 4%; $P = 1.00$) (Figure 1B).

DISCUSSION AND CONCLUSION

In our study, 8% of the ITP patients clinically relapsed after the first COVID-19 injection and 4% after the second. A fall in platelet count was more likely in the presence of bleeding symptoms, but only after the first injection.

A recent prospective study found a relapse incidence of 12%.⁷ As reported by the author, this may be an overestimation due to an intensified focus on bleeding complaints resulting from media attention for vaccine-induced thrombotic thrombocytopenia.

In general, ITP relapses after COVID-19 vaccination may occur, particularly after the first injection, and bleeding complaints should prompt checking platelet counts.

CONFLICT OF INTEREST

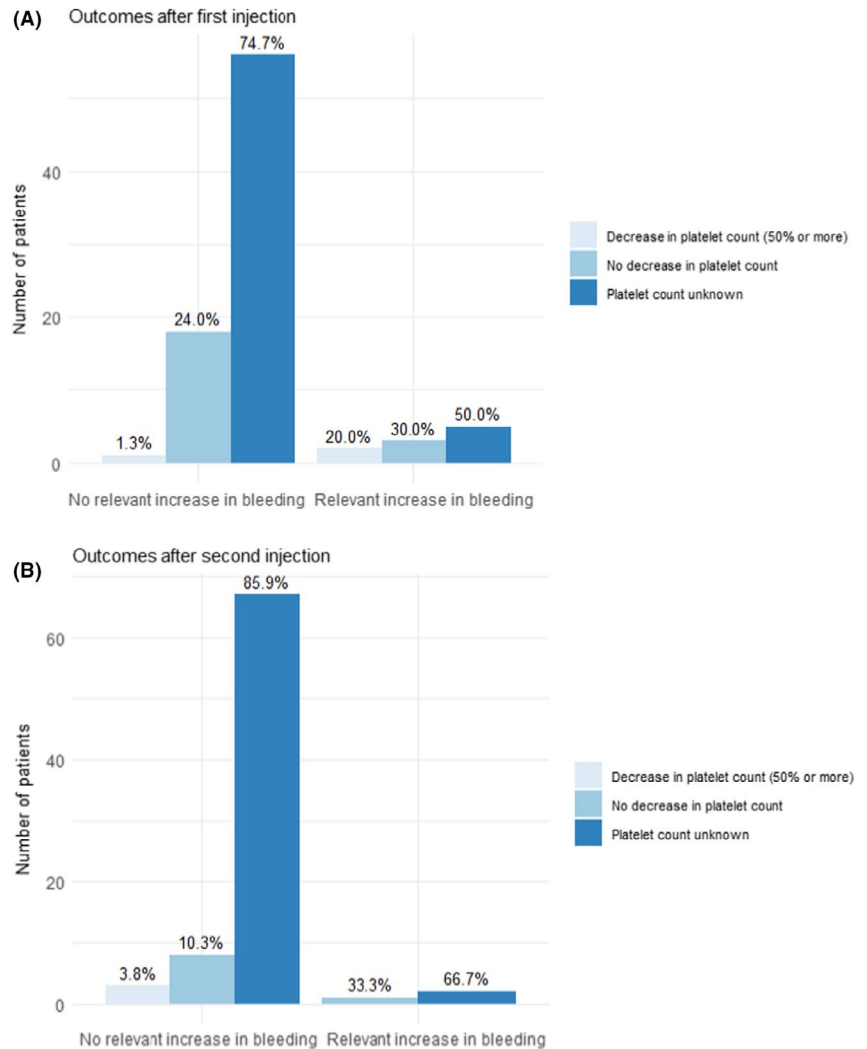
The authors declare to have no potential conflict of interest.

Novelty statement: This research addressed the feeling of insecurity of patients with immune thrombocytopenia (ITP) and their physicians regarding the risk of relapse after COVID-19 vaccination. Our conclusion is that ITP relapses do occur after COVID-19 vaccination. The risk of relapse is highest in patients with an increase in bleeding complaints and after the first rather than the second injection.

This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.



© 2021 The Authors. *European Journal of Haematology* published by John Wiley & Sons Ltd.

FIGURE 1 Change in platelet counts for patients with and without an increase in bleeding complaints after the first injection A, and the second injection B



DATA AVAILABILITY STATEMENT

The data used for this research are available from the corresponding author upon reasonable request.


Wobke E. M. van Dijk 
Roger E. G. Schutgens 

Center for Benign Hematology, Thrombosis and Hemostasis, Van
Creveldkliniek, University Medical Center Utrecht, University
Utrecht, Utrecht, The Netherlands

Correspondence

Roger E.G. Schutgens, Van Creveldkliniek, University
Medical Center Utrecht, University Utrecht, Office C.01.428,
Postbox 85500, 3508 GA Utrecht, The Netherlands.
Email: r.schutgens@umcutrecht.nl

ORCID

Wobke E. M. van Dijk  <https://orcid.org/0000-0002-0821-7875>
Roger E. G. Schutgens  <https://orcid.org/0000-0002-2762-6033>

REFERENCES

- Candelli M, Rossi E, Valletta F, De Stefano V, Franceschi F. Immune thrombocytopenic purpura after SARS-CoV-2 vaccine. *Br J Haematol.* 2021;194(3):547-549.
- Tarawneh O, Tarawneh H. Immune thrombocytopenia in a 22-year-old post Covid-19 vaccine. *Am J Hematol.* 2021;96(5):E133-E134.
- Fueyo-Rodriguez O, Valente-Acosta B, Jimenez-Soto R, et al. Secondary immune thrombocytopenia supposedly attributable to COVID-19 vaccination. *BMJ Case Rep.* 2021;14(5):e242220.
- Helms JM, Ansteatt KT, Roberts JC, et al. Severe, refractory immune thrombocytopenia occurring after SARS-CoV-2 vaccine. *J Blood Med.* 2021;12:221-224.
- Alonso-Beato R, Morales-Ortega A, la Fernández FJD, et al. Immune thrombocytopenia and COVID-19: Case report and review of literature. *Lupus.* 2021;30(9):1515-1521.
- Kewan T, Gunaratne TN, Mushtaq K, Alayan D, Daw H, Haddad A. Outcomes and management of immune thrombocytopenia secondary to COVID-19: cleveland clinic experience. *Transfusion.* 2021;61(7):2014-2018.
- Kuter DJ. Exacerbation of immune thrombocytopenia following COVID-19 vaccination. *Br J Haematol.* Published online June; 2021.