

# **Inflammation and platelet activation after COVID-19 vaccines - possible mechanisms behind Vaccine-induced Immune Thrombocytopenia and Thrombosis**

Sisse Rye Ostrowski<sup>1</sup>, Ole S. Søgaard<sup>2</sup>, Martin Tolstrup<sup>2</sup>, Nina B. Stærke<sup>2</sup>, Jens Lundgren<sup>3</sup>, Lars Østergaard<sup>2</sup>, Anne-Mette Hvas<sup>4</sup>

<sup>1</sup>Dept. of Clinical Immunology, Copenhagen Hospital Biobank Unit, Rigshospitalet, University of Copenhagen and Dept. of Clinical Medicine, Faculty of Health and Medical Sciences, University of Copenhagen;

<sup>2</sup>Dept. Infectious Disease, Aarhus University Hospital and Dept. of Clinical Medicine, Aarhus University;

<sup>3</sup>Dept. of Infectious Diseases, Rigshospitalet, University of Copenhagen and Dept. of Clinical Medicine, Faculty of Health and Medical Sciences, University of Copenhagen;

<sup>4</sup>Dept. Clinical Biochemistry, Aarhus University Hospital, Aarhus University and Dept. of Clinical Medicine, Aarhus University

## **Correspondence**

Anne-Mette Hvas, professor, chief physician, MD, PhD

Department of Clinical Biochemistry

Palle Juul-Jensens Boulevard 99

DK-8200 Denmark

[am.hvas@dadlnet.dk](mailto:am.hvas@dadlnet.dk)

## Supplementary

### Table S1

Intercorrelations between platelet activation markers pre-, post-vaccination and delta values in all (n=80), AZ (n=55) and mRNA (n=25) vaccinated individuals.

### Figure S1

Spearman correlations between post-vaccination platelet count and platelet activation markers (P-selectin, TGF- $\beta$  and CD40L) pre- and post-vaccination (and delta values) with AZ (n=55) or mRNA (n=25) vaccines.

**Table S1**

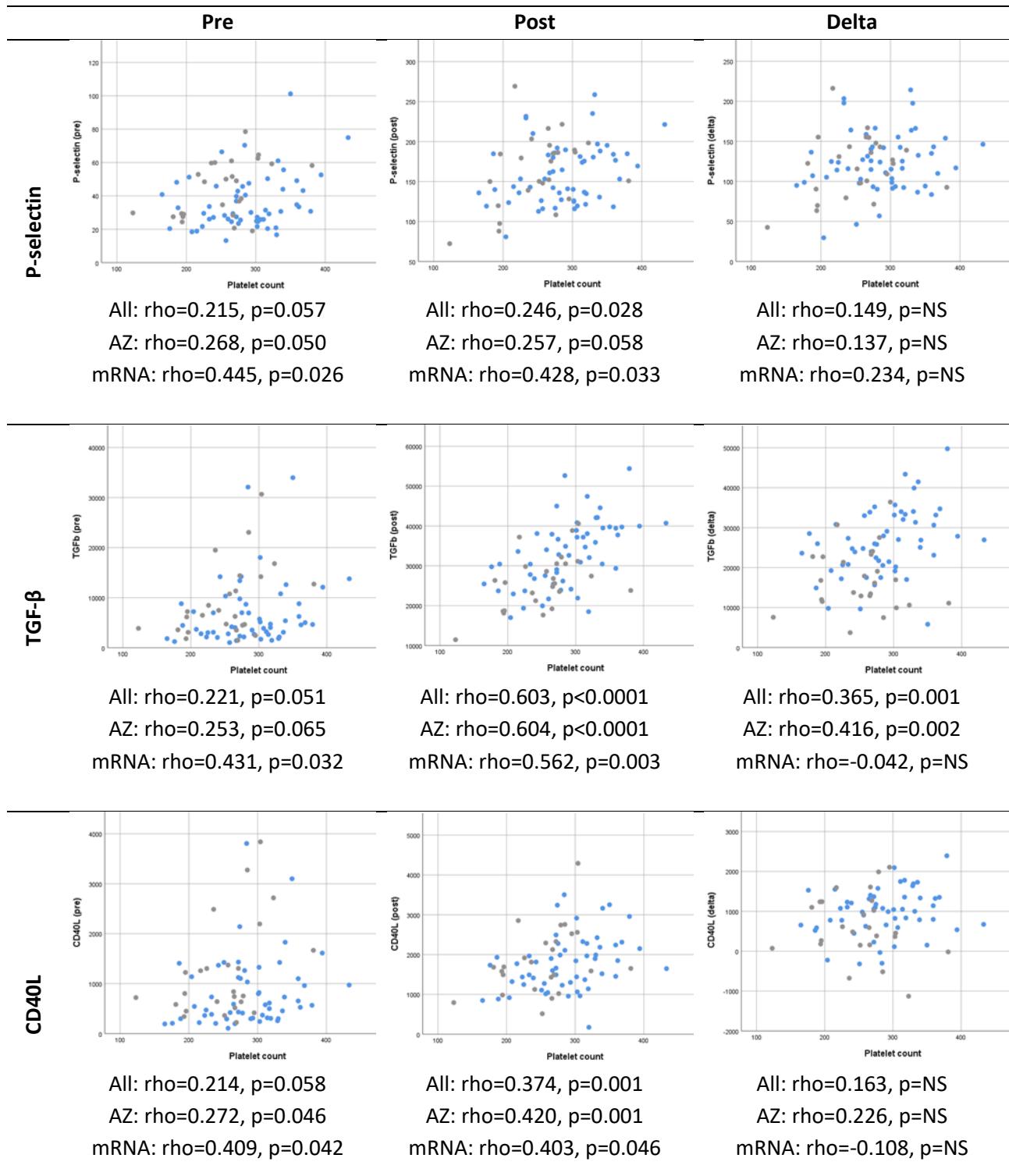
Intercorrelations between platelet activation markers pre-, post-vaccination and delta values in all (n=80), AZ (n=55) and mRNA (n=25) vaccinated individuals.

		TGF- $\beta$ Pre / Post / Delta	CD40L Pre / Post / Delta	TGF- $\beta$ Pre / Post / Delta	CD40L Pre / Post / Delta	TGF- $\beta$ Pre / Post / Delta	CD40L Pre / Post / Delta	
		<b>All n=80</b>			<b>AZ n=55</b>		<b>mRNA n=25</b>	
P-selectin	Pre	rho=0.738 p<0.0001	rho=0.698 p<0.0001	rho=0.665 p<0.0001	rho=0.627 p<0.0001	rho=0.819 p<0.0001	rho=0.758 p<0.0001	
	Post	rho=0.374 0.001	rho=0.490 p<0.0001	rho=0.415 0.002	rho=0.489 p<0.0001	rho=0.531 0.006	rho=0.482 0.015	
	Delta	rho=0.402 p<0.0001	rho=0.487 p<0.0001	rho=0.445 0.001	rho=0.495 p<0.0001	rho=0.468 0.018	rho=0.495 0.012	
TGF- $\beta$	Pre	N/A	rho=0.944 p<0.0001	N/A	rho=0.944 p<0.0001	N/A	rho=0.926 p<0.0001	
	Post	N/A	rho=0.688 p<0.0001	N/A	rho=0.725 p<0.0001	N/A	rho=0.897 p<0.0001	
	Delta	N/A	rho=0.792 p<0.0001	N/A	rho=0.734 p<0.0001	N/A	rho=0.899 p<0.0001	

Correlations between post-vaccination platelet count and pre-, post-vaccination and delta-value platelet activation marker levels were assessed by Spearman correlations displaying rho and p-values. Only the same time-points were compared i.e. pre- vs pre-vaccination, post- vs post-vaccination and delta vs delta values.

## Figure S1

Spearman correlations between post-vaccination platelet count and platelet activation markers (P-selectin, TGF- $\beta$  and CD40L) pre- and post-vaccination (and delta values) with AZ (n=55) or mRNA (n=25) vaccines. AZ=blue dots. mRNA=gray dots.



Inter correlations between platelet activations markers pre-, post-vaccination and delta-value levels were assessed by Spearman correlations displaying rho and p-values.