

## Heparin-induzierte Thrombozytopenie: von der bakteriellen Abwehr zu einem neuen Mechanismus der Autoimmunität

1. Greinacher A. Heparin-induced thrombocytopenia. *N Engl J Med* 2015;373:1883-4.
2. Warkentin TE, Chong BH, Greinacher A. Heparin-induced thrombocytopenia: Towards consensus. *ThrombHaemost* 1998;79:1-7.
3. Cuker A, Arepally GM, Chong BH, Cines DB, Greinacher A, Gruel Y, et al. American society of hematology 2018 guidelines for management of venous thromboembolism: Heparin-induced thrombocytopenia. *Blood Adv* 2018;2:3360-92.
4. Nguyen TH, Medvedev N, Delcea M, Greinacher A. Anti-platelet factor 4/polyanion antibodies mediate a new mechanism of autoimmunity. *Nat Commun* 2017;8:14945.
5. Greinacher A, Selleng K, Warkentin TE. Autoimmune heparin-induced thrombocytopenia. *J Thromb Haemost* 2017;15:2099-114.
6. Poudel DR, Ghimire S, Dhital R, Forman DA, Warkentin TE. Spontaneous hit syndrome post-knee replacement surgery with delayed recovery of thrombocytopenia: A case report and literature review. *Platelets* 2017;28:614-20.
7. Jaax ME, Krauel K, Marschall T, Brandt S, Gansler J, Furll B, et al. Complex formation with nucleic acids and aptamers alters the antigenic properties of platelet factor 4. *Blood* 2013;122:272-81.
8. Greinacher A, Kohlmann T, Strobel U, Sheppard JA, Warkentin TE. The temporal profile of the anti-pf4/heparin immune response. *Blood* 2009;113:4970-6.
9. Greinacher A, Kohlmann T, Strobel U, Sheppard JA, Warkentin TE. The temporal profile of the anti-pf4/heparin immune response. *Blood* 2008.
10. Krauel K, Potschke C, Weber C, Kessler W, Furll B, Ittermann T, et al. Platelet factor 4 binds to bacteria-inducing antibodies cross-reacting with the major antigen in heparin-induced thrombocytopenia. *Blood* 2011;117:1370-8.
11. Palankar R, Kohler TP, Krauel K, Wesche J, Hammerschmidt S, Greinacher A. Platelets kill bacteria by bridging innate and adaptive immunity via platelet factor 4 and fcgammariia. *J Thromb Haemost* 2018;16:1187-97.
12. Greinacher A, Krauel K, Jensch I. Hit-antibodies promote their own antigen. *Blood* 2012;120:930-1.
13. Greinacher A, Holtfreter B, Krauel K, Gatke D, Weber C, Ittermann T, et al. Association of natural anti-platelet factor 4/heparin antibodies with periodontal disease. *Blood* 2011;118:1395-401.
14. Krauel K, Weber C, Brandt S, Zahringer U, Mamat U, Greinacher A, et al. Platelet factor 4 binding to lipid a of gram-negative bacteria exposes pf4/heparin-like epitopes. *Blood* 2012;120:3345-52.
15. Greinacher A, Gopinadhan M, Gunther JU, Omer-Adam MA, Strobel U, Warkentin TE, et al. Close approximation of two platelet factor 4 tetramers by charge neutralization forms the antigens recognized by hit antibodies. *ArteriosclerThrombVascBiol* 2006;26 2386-93.
16. Brandt S, Krauel K, Gottschalk KE, Renne T, Helm CA, Greinacher A, et al. Characterisation of the conformational changes in platelet factor 4 induced by polyanions: Towards in vitro prediction of antigenicity. *Thromb Haemost* 2014;112:53-64.
17. Block S, Greinacher A, Helm CA, Delcea M. Characterization of bonds formed between platelet factor 4 and negatively charged drugs using single molecule force spectroscopy. *Soft Matter* 2014;10:2775-84.
18. Kreimann M, Brandt S, Krauel K, Block S, Helm CA, Weitschies W, et al. Binding of anti-platelet factor 4/heparin antibodies depends on the thermodynamics of conformational changes in platelet factor 4. *Blood* 2014;124:2442-9.
19. Nguyen TH, Greinacher A, Delcea M. Quantitative description of thermodynamic and kinetic properties of the platelet factor 4/heparin bonds. *Nanoscale* 2015;7:10130-9.
20. Delcea M, Greinacher A. Biophysical tools to assess the interaction of pf4 with polyanions. *Thromb Haemost* 2016;116:783-91.