

## **Heparin Induced Thrombocytopenia (HIT)**

**Amiral J**, Bridey F, Dreyfus M, **Vissac AM**, Fressinaud E, Wolf M, Meyer D.

Platelet Factor 4 Complexed to Heparin Is the Target for Antibodies Generated in Heparin-Induced Thrombocytopenia.

*Thromb. Haemostasis*, 68 (1), 95-96, 1992.

Greinacher A, Potzsch B, **Amiral J**, Dummel V, Eichner A, Mueller-Eckhardt C.

Heparin-associated thrombocytopenia : isolation of the antibody and characterization of a multimolecular PF4-heparin complex as the major antigen.

*Thromb. Haemostasis* 71(2), 247-251, 1994

Greinacher A, **Amiral J**, Dummel V, **Vissac AM**, Kiefel V, Mueller-Eckhardt C.

Laboratory diagnosis of heparin-associated thrombocytopenia and comparison of platelet aggregation test, heparin-induced platelet activation test, and platelet factor 4/heparin enzyme-linked immunosorbent assay

*Transfusion* 34 (5), 381-385, 1994

Cadroy Y, **Amiral J**, Raynaud H, Brunel P, Mazaleyrat A, Sauer M, Sie P.

Evolution of antibodies anti-PF4/heparin in a patient with a history of heparin-induced thrombocytopenia reexposed to heparin.

*Thromb. Haemostasis* 72 (5), 783-784, 1994

**Amiral J**, Bridey F, Wolf M, Boyer-Neumann C, Fressinaud E, **Vissac AM**, Peynaud-Debayle E, Dreyfus M, Meyer D.

Antibodies to macromolecular platelet factor 4-heparin complexes in heparin-induced thrombocytopenia : a study of 44 cases.

*Thromb. Haemostasis* 73(1), 21-28, 1995.

**Amiral J**, Meyer D.

Rôle du facteur plaquettaire 4 (PF4) dans les thrombopénies induites par l'héparine.

*STV* 7 (8): 549-555; 1995.

Arepally G, Reynolds C, Tomaski A, **Amiral J**, Jawad a, Poncz M, Cines DB.

Comparison of PF4/heparin ELISA assay with 14C-serotonin release assay in the diagnosis of heparin induced thrombocytopenia.

*Am. j. Clin. Pathol.* 104 (6): 648-654; 1995.

Samuelsson O., **Amiral J**., Attman Po, Bennegard K. Bjorck S., G. Larsson, Tengborn L.

Heparin-induced thrombocytopenia during continuous haemofiltration.

*Nephrol. Dial. Transplant.* 10: 1768-1771, 1995.

**Amiral J**, Wolf M, Fischer AM, Boyer-Neumann C, **Vissac AM**, Meyer D.

Pathogenicity of IgA and/or IgM antibodies to heparin-PF4 complexes in patients with heparin induced thrombocytopenia.

*Br. J. Haematol.* 92: 954-959; 1996.

De Sancho M, Lema MG, **Amiral J**, Rand J

Frequency of antibodies directed against heparin-platelet factor 4 in patients exposed to heparin through chronic hemodialysis.

*Thromb. Haemostasis* 75(4); 695-696 ; 1996.

**Amiral J**, Peynaud-Debayle E, Wolf M, Bridey F, **Vissac AM**, Meyer D.

Generation of antibodies to Heparin-PF4 complexes without thrombocytopenia in patients treated with unfractionated or low molecular weight heparin.

*Am. J. Hemat.* 52:90-95; 1996.

**Amiral J**, Marfaing-Koka A, Wolf M, Alessi MC, Tardy B, Boyer-Neumann C, **Vissac AM**, Fressinaud E, Poncz M, Meyer D.

Presence of auto-antibodies to interleukin-8 or neutrophil activating peptide-2 in patients with heparin-associated-thrombocytopenia.

*Blood* 88(2): 410-416, 1996.

**Amiral J**.

Pathogenicity of auto-antibodies to heparin-platelet factor 4 complexes and heparin-induced thrombocytopenia.

In : *Advances in anticoagulant, antithrombotic & thrombolytic therapeutics*. Ed : G. Zavoico. Chapter 8.3, pp1-20. 1996.

**Amiral J**, Wolf M, **Vissac AM**, Meyer D.

Mécanismes moléculaires et cellulaires des thrombopénies induites par l'héparine.

*Hématologie* 2(4):279-286; 1996.

**Amiral J**, Adam M, Cluzeau D, **Vissac AM**, Maillet T.

Different target specificities of phospholipid-dependent antibodies.

*Ann. Med. Interne* 147 (S1): 18-21; 1996.

**Amiral J**.

Le facteur 4 plaquettaire, cible des anticorps anti-héparine : application au diagnostic biologique de la thrombopénie induite par l'héparine (TIH)

*Ann Med Interne* 148(2): 142-149; 1997

**Amiral J**., Lormeau J.C., **Vissac A.M.**, Wolf M., Boyer-Neumann C. Tardy B., Herbert J.M., Meyer D.

Absence of cross-reactivity of SR 90107A/ORG 31540 pentasaccharide with antibodies developed in heparin-induced thrombocytopenia

*Blood Coag Fibrinolysis* 8: 114-117; 1997.

**Amiral J,**

Diagnostic tests in heparin-induced thrombocytopenia  
Proceedings of a Workshop held in London on 1 November 1996  
[Platelets 8: 68-72; 1997](#)

**Amiral J,** Baglin T.P., Magnani H.N., Mikhailidis D.P.

Consensus overview  
Proceedings of a Workshop held in London on 1 November 1996  
[Platelets 8: 82; 1997](#)

Bauer T-L, Arepally G, Konkle B.A, Mestichelli B, Shapiro S-S, Cines D-B, Poncz M, McNulty S, **Amiral J**, Hauck W-W, Edie R-N, Mannion J-D.

Prevalence of Heparin-Associated Antibodies without thrombosis in patients undergoing cardiopulmonary bypass surgery.  
[Circulation 95: 1242-1246; 1997](#)

Pouplard C, **Amiral J**, Borg JY, **Vissac AM**, Delahousse B, Gruel Y.

Differences in specificity of heparin-dependent antibodies developed under low-molecular-weight-heparin therapy and higher cross-reactivity with Orgaran.  
[Br J Haematology 99\(2\): 273-280; 1997.](#)

Elalamy I, Potevin F, Lecrubier C, **Amiral J**, Marie JP, Samama MM.

Diagnostic biologique de la thrombopénie immuno-allergique à l'héparine.  
[Feuil Biol XXXIX \(220\): 9-16; 1998.](#)

**Amiral J.**, Marfaing-Koka A., Poncz M, Meyer D.

The biological basis of immune heparin-induced thrombocytopenia.  
[Platelets 9: 77-91; 1998.](#)

Marc Trossaert, Gaillard A, Commin P-L, **Amiral J**, **Vissac A-M** and Fressinaud E.

High incidence of anti-heparin/platelet factor 4 antibodies after cardiopulmonary bypass surgery.  
[Br J Haematol 101\(4\): 653-655; 1998](#)

Amiral J, Meyer D.

Heparin Induced Thrombocytopenia: diagnostic tests and biological mechanisms.  
[Baillieres Clin Haematol 1998; 11\(2\): 447-460.](#)

Ahmad S, Walenga JM, Jeske WP, Messmore HL, **Amiral J**, Fareed J..

Functional heterogeneity of anti-platelet factor 4-heparin antibodies in patients with heparin-induced thrombocytopenic syndromes..  
[Proceedings of the 10<sup>th</sup> International Congress of Immunology – New Delhi, India – 1-6 November 1998](#)  
Editors GP Talwar, Indira Nath, NK Ganguly, KVS Rao.

Pouplard C, **Amiral J**, Borg J-Y, Laporte-Simitsidis S, Delahousse B, Pharm D, Gruel Y.

Decision analysis for use of platelet aggregation test, Carbon 14-serotonin release assay, and heparin-platelet factor 4 enzyme-linked immunosorbent assay for diagnosis of Heparin-Induced Thrombocytopenia.  
[Am J Clin Pathol 1999; 111\(5\): 700-706.](#)

Pouplard C, May MA, lochmann S, **Amiral J**, Vissac AM, Marchand M, Gruel Y.

Antibodies to platelet factor 4-heparin after cardiopulmonary bypass in patients anticoagulated with unfractionated heparin or a low-molecular-weight heparin. Clinical implications for heparin-induced thrombocytopenia.  
[Circulation 1999; 99: 2530-2536.](#)

**Amiral J.**

Antigens involved in Heparin-Induced Thrombocytopenia.  
[Semin Hematol 1999; 36\(1 s1\): 7-11.](#)

**Amiral J,** Meyer D.

Heparin-dependent antigens in heparin-Induced thrombocytopenia  
[In Warkentin, Greinacher : Heparin Induced thrombocytopenia \(1999\). Chap 6, pp127-138.](#)

**Amiral J,** Vissac AM.

Generation and pathogenicity of anti-platelet factor 4 antibodies : diagnostic implications.  
[Clin Appl Thrombosis/Hemostasis 1999; 5\(S1\): 28-31.](#)

**Amiral J.**

Diagnostic approach of phospholipid-dependent antibodies.  
[Haemostasis 1999; 29\(2-3\): 135-149.](#)

Pouplard C, May MA, lochmann S, **Amiral J**, Vissac AM, Marchand M, Gruel Y.

Antibodies to Platelet Factor 4-heparin after cardiopulmonary bypass in patients anticoagulated with unfractionated heparin or a low-molecular-weight heparin: clinical implications for heparin-induced thrombocytopenia.  
[Circulation 1999; 99\(19\): 2530-2536.](#)

**Amiral J,** Pouplard C, Vissac AM, Walenga JM, Jeske W, Gruel Y.

Affinity purification of heparin-dependent antibodies to platelet factor 4 developed in heparin-induced thrombocytopenia: biological

characteristics and effects on platelet activation.

*Br J Haematol* 2000; 109(2): 336-341.

de Maistre E, Regnault V, Lecompte T, Scheid Ph, Martinet Y, Bellou A, **Amiral J**, Vissac AM.

Antibodies to interleukin-8 and paraneoplastic catastrophic recurrent thromboses.

*Am J Med* 2001, 111 (7): 580-581.

Pouplard C., lochmann S, Renard B, Herault O, Colombat P. **Amiral J**, Gruel Y.

Induction of monocyte tissue factor expression by antibodies to heparin-platelet factor 4 complexes developed in heparin-induced thrombocytopenia.

*Blood* 2001; 97 (10): 3300-3302.

Blank M, Shoenfeld Y, Tavor S, Praprotnik S, Boffa MC, Weksler B, Walenga J, **Amiral J**, Eldor A.

Anti-platelet factor 4/heparin antibodies from patients with heparin-induced thrombocytopenia provoke direct activation of microvascular endothelial cells.

*Int Immunol* 2002; 14(2): 121-129.

**J Amiral**, G Jones and A M Vissac

Heparin-induced thrombocytopenia: a clinical paradox

*The BioMed Scientist*, 2007, June, 440-44.

AM Vissac, **J Amiral**

Mechanisms Involved in Heparin-Induced Thrombocytopenia and Associated Thrombosis

*Seminars in Thrombosis and Hemostasis*; 2008; 34(S 01):018-026

Desprez D<sup>1</sup>, Desprez P, Tardy B, Amiral J, Droulle C, Ducassou S, Mauvieux L, Grunebaum L

Anti-PF4 antibodies and thrombophlebitis in a child with cerebral venous thrombosis

*Ann Biol Clin (Paris)*. 2010 Nov-Dec;68(6):725-8

**Jean Amiral** and Anne Marie Vissac

Role of heparin-dependent antigens in immune heparin-induced thrombocytopenia

In Warkentin, Greinacher : *Heparin Induced thrombocytopenia* (2012). Vth Edit; Chap 6, pp164-180.

C Pouplard; D Leroux; J Rollin; **J Amiral**; MA May; Y Gruel

Incidence of antibodies to protamine sulfate/heparin complexes in cardiac surgery patients and impact on platelet activation and clinical outcome.

*Thromb Haemost* 2013; 109: 1141–1147

T Bakchoul, H Zöllner, **J Amiral**, S Panzer, S Selleng, T Kohlmann, S Brandt, M Delcea, T E. Warkentin, UJ Sachs and A Greinacher

Anti-protamine-heparin antibodies: incidence, clinical relevance and pathogenesis

*Blood*. 2013;121(15):2821-2827

A Grandvullemin, G Zanetta, J Perrin, **J Amiral**, Il Elalamy, and E de Maistre,

Unusual Case of HIT With Cardiac Arrest During Hemodialysis

*Annals of Pharmacotherapy* ; 2014 ; 48(8) ; 1086-89.

S Panzer, A Schiferer , B Steinlechner , L Drouet and **J Amiral**

Serological features of antibodies to protamine inducing thrombocytopenia and thrombosis

*Clin Chem Lab Med* 2015; 53(2) ;