Laboratory approach for vaccine-induced thrombotic thrombocytopenia (VITT) diagnosis:

A retrospective study of clinically suspected cases in The Netherlands

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Disclosure

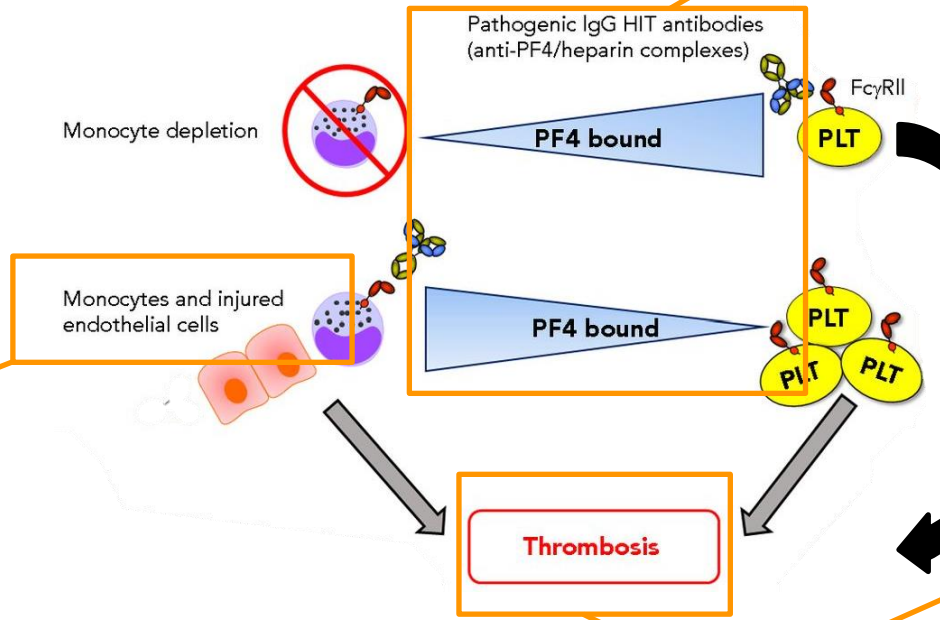
No conflict of interest to declare

Vaccine-induced thrombotic thrombocytopenia (VITT)		Heparin induced thrombocytopenia (HIT)
Thrombocytopenia and/or thrombosis		Thrombocytopenia and/or thrombosis
5-30 days after vaccination		5-14 days after heparin exposure
Incidence AstraZeneca NL: 1:87.182 Incidence Janssen NL: 1:194.803		12 million people in the US receive heparin 0.5-1% of patients develop HIT
Pathophysiology not fully understood		Pathophysiology not fully understood

Arepally & Padmanabhan, 2021 *Arteriosclerosis, Thrombosis, and Vascular Biology*
Pavord et al., 2021, *The New England Journal of Medicine*

Current opinions on HIT

What is the role of PF4?
Dynamic redistribution of PF4?



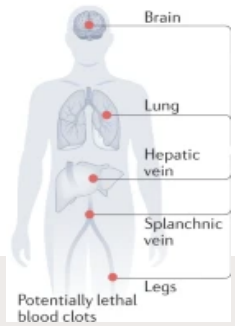
Microparticles

Severe thrombocytopenia

Less thrombocytopenia

What is the role of monocytes and endothelial cells?

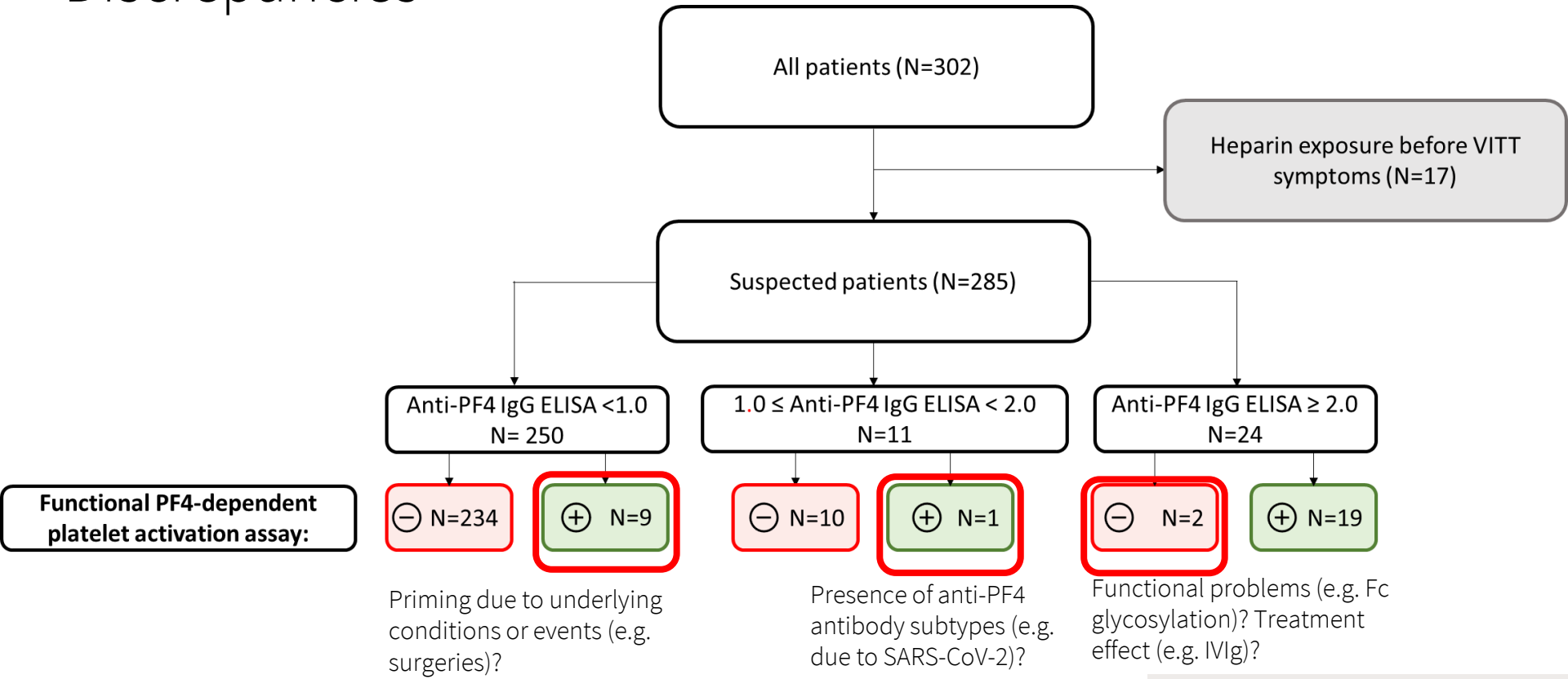
VITT



Switch between thrombocytopenia and thrombosis?

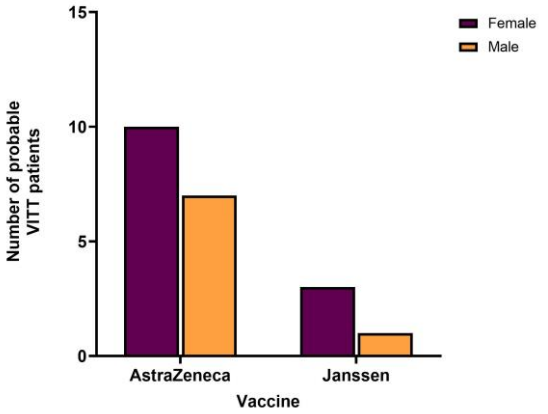
Adapted from Semple & Kapur, 2018 *Blood*

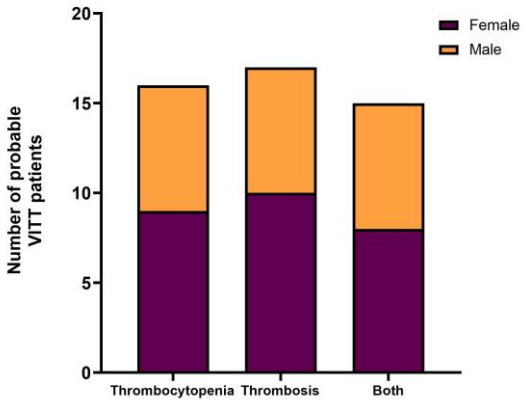
Discrepancies

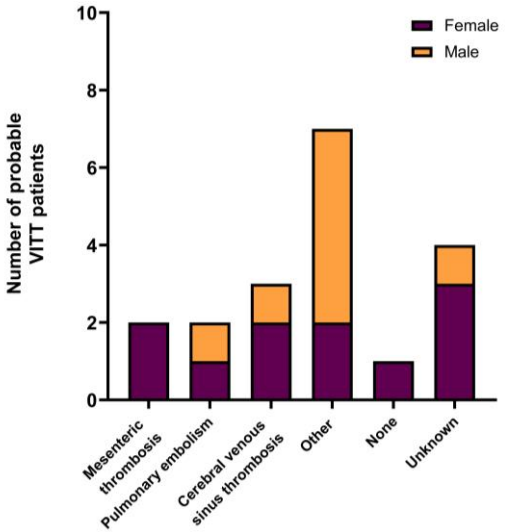


Meier et al., manuscript in preparation

Demographics probable VITT patients







Probable VITT only in patients vaccinated with AstraZeneca or Janssen vaccine

Unusual thrombosis sites probable VITT patients

Majority probable VITT patients suffered from thrombocytopenia and thrombosis

Meier et al., manuscript in preparation

Conclusions

- Probable VITT patients:
  - Vaccinated with viral vector vaccines
  - Experienced VITT-related symptoms after the first vaccination
  - Displayed symptoms after an average of 16 days post-vaccination
- Anti-PF4 IgG ELISA, PF4-dependent platelet activation assay, and clinical presentation is recommended for VITT diagnosis
- Platelet FcγRIIa seems to play a role in VITT (data not shown)
- More research needed to explain discrepancies in laboratory tests for VITT

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