Heparin-induced thrombocytopenia

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1 About 0.2% of patients exposed to heparin develop heparin-induced thrombocytopenia (HIT)

Heparin-induced thrombocytopenia is an uncommon condition mediated by anti-PF4 platelet-activating antibodies that typically begins 5–14 days after heparin initiation. Overall, greater risk is associated with unfractionated heparin than with low-molecular-weight heparin.[1]

2 This acquired hypercoagulable state carries a high risk of venous and arterial thrombosis

The platelet count nadir ranges from 10 to 150 (median: about 60) × 10^9/L, or a drop of 50% or more.[1] As many as 70% of patients with HIT experience thrombosis, most often deep-vein thrombosis, pulmonary embolism or both, but also arterial thrombosis.[1]

3 A 4Ts score > 3 should prompt antibody screening and, if positive, a platelet activation assay

A 4Ts score estimates pretest probability of HIT compared with other causes of thrombocytopenia, assessing platelet count, timing, sequelae and causes.[2] Screening is usually performed by immunologic assays (e.g., enzyme-linked immunosorbent assay [ELISA]). If positive, a confirmatory platelet activation test (e.g., serotonin-release assay) is required as many patients with a positive ELISA result do not have HIT.

4 If HIT is suspected, heparin should be stopped and alternative anticoagulation started

Warfarin should be avoided and vitamin K administered if warfarin has already been given, because of the risk of warfarin-associated microthrombosis.[3] Factor Xa inhibitors (fondaparinux, apixaban, rivaroxaban) and thrombin inhibitors (argatroban, bivalirudin, dabigatran) should be considered if the patient needs anticoagulation. Intravenous immunoglobulin may be beneficial in atypical, severe HIT.[4] Patients should be referred to a hematologist if possible.

5 Vaccine-induced immune thrombotic thrombocytopenia (VITT) is an uncommon complication of the SARS-CoV-2 vaccine produced by AstraZeneca (ChAdOx1 nCoV-19) that mimics severe HIT in patients without exposure to heparin

Clinical features of VITT include thrombocytopenia and unusual thrombi, including cerebral venous sinus thrombosis and splanchnic vein thrombosis.[5] A 4Ts score, substituting "vaccine" for "heparin," can be used. Treatment for VITT is similar to that for HIT but emphasizes high-dose intravenous immunoglobulin. Diagnostic testing for VITT antibodies is available in Canada (McMaster Platelet Immunology Laboratory, in Hamilton, Ont.).

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