

How Significant is Your Heparin Problem?

Heparin-induced Thrombocytopenia (HIT) occurs in 3% of patients who receive therapeutic intravenous unfractionated heparin and 0.5% - 1% of patients who receive lower doses (subcutaneous or flushes), low- molecular-weight heparin, or even the tiny amounts that leach from heparin-coated catheters. (1-3). HIT can present 5 to 12 days after heparin exposure, with or without arterial or venous thromboemboli. Delayed recognition and treatment of HIT can contribute to poor patient outcomes (4).

Symptoms of HIT include:

- Drop in platelet count after initiating heparin therapy
- 30% - 75% of patients with HIT experience venous or arterial thromboemboli (5).
- Deep venous thromboses and pulmonary emboli
- Arterial thromboses of the extremities
- Stroke
- Myocardial infarction
- Presence of mild to moderate thrombocytopenia
- Hypotension
- Dyspnea
- Tachycardia
- Pleuritic pain
- Hemoptysis

Delayed-onset HIT should be a primary diagnostic consideration whenever a recently hospitalized patient presents with thromboembolism. Physicians should be aware that even a modestly low platelet count on representation could be an essential clue to underlying HIT. In such cases, physicians could initiate early alternative anticoagulant therapy, instead of thrombotic diathesis (4). A serologic test for Heparin-induced antibodies and regular monitoring of platelet counts can determine HIT. **ONCE HIT IS SUSPECTED, ALL HEPARIN PRODUCTS SHOULD BE DISCONTINUED, WHICH INCLUDE HEPARIN ON HEMODIALYSIS AS WELL AS FOR CATHETER FLUSH.**

Alternatives to Heparin include:

Lepirudin (Refludan) *Hirudin is contraindicated for patients with significant renal failure.

Danaparoid sodium (Orgaran)

Argatroban

Warfarin sodium (Coumadin)

Viprinex

The above alternatives to Heparin are expensive, have side effects and are not well proven as good alternatives. Alternatives in hemodialysis include Citrasate® dialysis concentrate and dialyzers that reduce the need for heparin (i.e. Rexeed® dialyzers by Asahi Medical). For additional information on these products, call Dial Medical Customer Service at 800-346-2080.

References:

1. Warkentin TE, Levine MN, Hirsh J, Horsewood P, Roberts RS, Gent M, et al. Heparin-induced thrombocytopenia in patients treated with low-molecular-weight heparin or unfractionated heparin. *N Engl J Med.* 1995;332:1330-5. [PMID: 7715641]
2. Rice L, Huffman DM, Levine ML, Udden MM, Waddell CC, Luper WE. Heparin-induced thrombocytopenia/thrombosis syndrome: clinical manifestation and insights (Abstract). *Blood.* 1986;68(Suppl 1):339a.
3. Laster J, Silver D. Heparin-coated catheters and heparin-induced thrombocytopenia . *J Vasc Surg.* 1988;7:667-72. [PMID: 3367431]
4. Rice L, Attisha WK, Drexler A, Francis, JL. Delayed-onset heparin-induced thrombocytopenia. *Ann Intern Med.* 2002;136:210-215
5. Warkentin TE, Kelton JG. A 14-year study of heparin-induced thrombocytopenia. *Am J Med.* 1996;101:502-07. [PMID: 8948273]