HEPARIN INDUCED THROMBOCYTOPENIA SYNDROME (HITS) - ASSESSMENT AND MANAGEMENT

General
- **Heparin-induced thrombocytopenia** (HITS) is the most important of immune-mediated, drug-induced thrombocytopenia. It is caused by the development of antibodies to platelet factor 4 (PF4) and heparin. These antibodies can lead to platelet activation and subsequent thrombotic complications.

Incidence
- 1-3% of patients exposed to unfractionated heparin (UFH) develop HITS
- 0-0.8% receiving low molecular weight heparin (LMWH) for > 5 days develop HITS
- More common with longer duration, higher dose, in women and post-surgical > medical > obstetric
- The risk is very low in obstetric patients given prophylactic LMWH

Clinical features
- Moderate **thrombocytopenia** (with a median platelet count nadir of ~50-60x10^9 platelets/L) with the platelet count beginning to drop within 5 to 10 days of starting heparin. A more rapid drop in the platelet count can occur in patients who have been recently exposed to heparin (within the preceding 3 months), due to preformed anti-heparin/PF4 antibodies.
- Thromboembolism: arterial or venous
- Skin lesions at the injection site

Differential Diagnosis
- 10-30% of patients receiving heparin develop a mild thrombocytopenia, which must be differentiated from HITS. **Non-immune heparin-associated thrombocytopenia** is not associated with bleeding or thrombosis, it is not progressive, it usually occurs in the first 5 days of therapy and the platelet count is usually > 100x10^9/L

Monitoring for HITS
Check platelet count as directed below:
- Prior to commencing treatment with UFH: all patients
- 24 h after starting UFH: patients who have been exposed to heparin in the last 100 days (risk of pre-sensitisation)

<table>
<thead>
<tr>
<th>Risk group</th>
<th>Patients</th>
<th>Platelet Monitoring, days 4-14</th>
</tr>
</thead>
<tbody>
<tr>
<td>High risk</td>
<td>Therapeutic UFH</td>
<td>Every 2 days</td>
</tr>
<tr>
<td></td>
<td>UFH prophylaxis in post-surgical patients</td>
<td></td>
</tr>
<tr>
<td>Intermediate risk</td>
<td>UFH prophylaxis in medical &amp; obstetric patients</td>
<td>Every 3 days</td>
</tr>
<tr>
<td></td>
<td>LMWH prophylaxis post-surgery</td>
<td></td>
</tr>
<tr>
<td>Low risk</td>
<td>LMWH (treatment &amp; prophylaxis) in medical &amp; obstetric patients</td>
<td>Nil</td>
</tr>
</tbody>
</table>
HEPARIN INDUCED THROMBOCYTOPENIA SYNDROME (HITS) - ASSESSMENT AND MANAGEMENT  cont’d

➢ Suspect HITS if
  o The platelet count falls >50%, or
  o Absolute platelet count is ≤150x10⁹/L

Management
  o Exclude other causes of thrombocytopenia
  o Clinical decisions should be made in consultation with a haematologist
  o If HITS is strongly suspected:
    o CONSULT HAEMATOLOGIST
    o Send appropriate samples for anti-heparin antibody testing
      ▪ Do not wait for results
      ▪ Screening test: PAIGIA: performed within 1-2 working days (Call Haematologist if weekend)
      ▪ Gold Standard: Serotonin Release Assay, performed approximately monthly
    o Stop heparin therapy:
      ▪ Every molecule of heparin must be discontinued, ie, unfractionated heparin, low-molecular-weight heparin, flushes, and all coated catheters
    o Initiate therapy with alternative, non-heparin anticoagulant
      ▪ E.g. Danaparoid, Lepirudin, Fondaparinux (refer to POW Haematology clinical business rules for dosing and administration details)
      o Do not give warfarin until platelet count is >150 x10⁹/L
      o Avoid LMWH due to potential for antibody cross-reactivity
      o Avoid platelet transfusions
      o Assess clinically for venous thrombosis
      o Clearly record the diagnosis in the medical record and allergy section of the eMR

Subsequent Management
  o The non-heparin anticoagulant should be continued until the thrombocytopenia has resolved
  o If a thrombosis has occurred, e.g. DVT, an extended period of anticoagulation will be required
  o Further exposure to heparin should be avoided.
  o In future, an alternative anticoagulant to UFH and LMWH should be used
  o In specific clinical scenarios, repeat administration of heparin may be considered if HITS occurred a long time before (>100days), the patient is negative for antibodies to the heparin-PF4 complex, and the exposure time will be limited.

➢ DISCUSS WITH HAEMATOLOGIST
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References:

Related Policies:
Heparin
Bridging anticoagulation
Thromboembolism prophylaxis

Risk rating: Low- review in 2020