**TABLE 9: TRANSFUSION-ASSOCIATED GRAFT VERSUS HOST DISEASE (TA-GVHD)**

<table>
<thead>
<tr>
<th>Signs &amp; Symptoms</th>
<th>Possible Etiology</th>
<th>Suggested Treatment &amp; Actions</th>
<th>Suggested Laboratory Investigations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clinical Presentation</strong></td>
<td><strong>TA-GVHD results from the infusion of viable T lymphocytes within cellular blood components (RBC and platelets) into patients who are highly immunosuppressed or cannot recognize the donor lymphocytes as foreign and reject them, allowing the donor lymphocytes to engraft in the patient. TA-GVHD occurs when the patient HLA antigens are recognized as foreign by the engrafted donor lymphocytes, which then attack the patient’s cells.</strong></td>
<td><strong>Consult Physician</strong>&lt;br&gt;<strong>Detailed transfusion history</strong>&lt;br&gt;<strong>Implement therapeutic interventions as ordered by physician</strong>&lt;br&gt;<strong>Continue to monitor patient for:</strong>&lt;br&gt;  - emerging S&amp;S&lt;br&gt;  - deterioration in patient’s condition&lt;br&gt;  - response to interventions&lt;br&gt;  - 1 EDTA tube to Hematology for Complete blood count&lt;br&gt;  - 1 (green) tube to Chemistry for LFT’s&lt;br&gt;  - Complete Transfusion Reaction Report Form**&lt;br&gt;  - Document event in patient records&lt;br&gt;  - Suggest referral to hematologist</td>
<td><strong>Monitor HGB, platelets &amp; white cell count</strong>&lt;br&gt;<strong>Monitor LFT</strong>&lt;br&gt;<strong>Diagnosis can be made by biopsy of skin, liver, or bone marrow</strong>&lt;br&gt;<strong>Definitive diagnosis of TA-GVHD requires identification of donor derived lymphocytes in the patient peripheral blood or tissues (by HLA typing)</strong></td>
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<td><strong>Usual Timing</strong></td>
<td><strong>Symptoms typically appear 8-10 days following transfusion (range 3-30 days)</strong>&lt;br&gt;<strong>Onset is delayed in neonates (median onset of 28 days)</strong></td>
<td><strong>Consult Physician</strong>&lt;br&gt;<strong>Detailed transfusion history</strong>&lt;br&gt;<strong>Implement therapeutic interventions as ordered by physician</strong>&lt;br&gt;<strong>Continue to monitor patient for:</strong>&lt;br&gt;  - emerging S&amp;S&lt;br&gt;  - deterioration in patient’s condition&lt;br&gt;  - response to interventions&lt;br&gt;  - 1 EDTA tube to Hematology for Complete blood count&lt;br&gt;  - 1 (green) tube to Chemistry for LFT’s&lt;br&gt;  - Complete Transfusion Reaction Report Form**&lt;br&gt;  - Document event in patient records&lt;br&gt;  - Suggest referral to hematologist</td>
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**Prevention**

Prevention of TA-GVHD is of paramount importance as it cannot be treated successfully. This is accomplished by providing irradiated cellular blood products (RBC and platelets) to patients who are at risk of TA-GVHD (refer to PBCO guidelines for full details).

- **Patients who should receive irradiated blood products include:**
  - Patients with congenital immunodeficiency states affecting T-cells
  - Patients undergoing bone marrow or stem cell transplants
  - Recipients of directed transfusions from family members
  - Recipients of HLA-matched platelets
  - Patients treated with purine analogs (e.g., fludarabine), purine antagonists (e.g., bendamustine), alemtuzumab & anti-thymocyte globulin
  - Patients with lymphoproliferative disorders, especially Hodgkin lymphoma
  - Intrauterine transfusions (IUT)
  - Neonates who previously received IUT
  - Neonatal exchange transfusions
  - Low birth weight neonates (<1200 g)
  - Patients who are receiving highly immunosuppressive chemotherapy regimens for acute leukemia or solid tumour

**And**

- **Appropriate & timely communication of patient’s transfusion requirements**
- **Robust systems for noting patient’s transfusion requirements**
- **A pre-transfusion check for patient’s transfusion requirements:**
  - in the patient record,
  - on the transfusion record & tag, and
  - on the blood component bag

⚠️ **Delayed transfusion reactions may occur while patient is in hospital or after the patient has been discharged. The patient may be readmitted to hospital at a later date due to a delayed reaction.**

**All suspected transfusion reactions (including delayed transfusion reactions) should be reported to Transfusion Medicine Laboratory using a Transfusion Reaction Report Form 00055606 Sept 2012.**