Document Owner:
Transfusion Medicine

Purpose of Document(s):
Quick reference guide for transfusion reaction immediate management

Applicability
BC Children’s Hospital & BC Women’s Hospital + Health Centre

Version History

<table>
<thead>
<tr>
<th>DATE</th>
<th>DOCUMENT NUMBER and TITLE</th>
<th>ACTION TAKEN</th>
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<tr>
<td>24-Sept-2019</td>
<td>C-0506-14-60378 Transfusion Reaction Response: Reference Guide</td>
<td>Approved at: Transfusion Safety Committee</td>
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### Transfusion Reaction Response - Reference Guide

**Fever** is defined as:
- TEMPORAL temperature of 38.5°C or higher, AND a one degree or more rise in temp above the pre-transfusion baseline.
- ORAL temperature 38°C or higher, AND a one degree or more rise in temp above the pre-transfusion baseline.
- AXILLA temperature of 37.5°C or higher, AND a one degree or more rise in temp above the pre-transfusion baseline.

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Oral</th>
<th>Temporal</th>
<th>Axilla</th>
<th>Rectal</th>
</tr>
</thead>
<tbody>
<tr>
<td>38°C</td>
<td>38°C</td>
<td>37.5°C</td>
<td>38.5°C</td>
<td></td>
</tr>
<tr>
<td>39°C</td>
<td>39°C</td>
<td>38.5°C</td>
<td>39.5°C</td>
<td></td>
</tr>
</tbody>
</table>

⚠️ For ALL suspected blood component/product transfusion reactions refer to Transfusion Reaction Immediate Management Procedure

1. **STOP** the transfusion and give 0.9% Normal Saline at TKVO, or prescribed rate, via rescue line.
2. **ASSESS** the patient’s vital signs and symptoms and stabilize the patient.
3. **RECONFIRM** unique identifiers on both patient and blood product.
   - Verify the information is IDENTICAL on the (1) patient ID band, (2) blood product tag, and (3) blood product label.
4. Call Transfusion Medicine Laboratory (TML) at 7388 IMMEDIATELY if an error has occurred. Another patient may be at risk.
5. **NOTIFY** physician of the reaction.
   - Follow the physician’s instructions for the treatment and management of the clinical symptoms.
   - Call TML IMMEDIATELY if the patient has any of the following:
     - new onset red/brown urine, or
     - sudden onset of hypotension, or
     - sudden onset of hypoxemia, or
     - if you suspect bacterial contamination of the component/product (see Table 1)

6. **INITIATE** the transfusion reaction investigation (see Table 2).
   i. **COMPLETE** Transfusion Reaction Report Form (TRRF) (00055606).
   ii. Collect PROMPTLY and send samples (if required) see table 2
      - EDTA (lavender) sample for Direct Antiglobulin Test (DAT)
      - Send to TML with Transfusion Reaction Report Form. The sample tube does not need to be hand labelled.
      - Volume: optimum 1 mL, minimum 0.5 mL.
      - Urine Sample, first voided post-reaction urine sample for routine urinalysis, send to chemistry. (Form 95170 Rev. 5/93 00055597)
      - Blood Cultures, for suspected bacterial contamination only, see Table 1, send to microbiology. (Form L 1050 Rev. 3/10 0005197)
   iii. Send Completed Transfusion Reaction Report Form to TML. Photocopy form & retain photocopy in patient chart, send original copy to TML.

**Table 1: Suspect Bacterial Contamination of the component/product** IF patient meets the criteria outlined in A, B, C or D:

A. A temporal temperature of 38.5°C or higher, or an oral temperature of 38°C or higher, or an axilla temperature of 37.5°C or higher, AND a one degree or more rise in temperature above the pre-transfusion baseline, PLUS any of the following: rigours, shortness of breath, hypotension, tachycardia, nausea, or vomiting OR

B. A temporal temperature of 39.5°C or higher, or an oral temperature of 39°C or higher, or an axilla temperature of 38.5°C or higher, AND a one degree or more rise temperature above the pre-transfusion baseline even in the absence of other signs & symptoms. OR

C. Fever* not responding to antipyretics. OR

D. A high suspicion of sepsis even in the absence of fever.

*These are S&S of a severe reaction & bacterial contamination should be suspected regardless of the patient’s underlying condition.*

**Table 2:**

<table>
<thead>
<tr>
<th>Clinical Signs &amp; Symptoms (S&amp;S)</th>
<th>Send to TML</th>
<th>Ongoing Transfusion Care</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Form</td>
<td>Product</td>
</tr>
<tr>
<td>Hives &amp;/or itching, over less than ¼ of the body with all blood components/products</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>IVIG only: Mild transient S&amp;S / side effects, that resolve with reduced flow rate or medication</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>All other signs or symptoms with all blood components/products</td>
<td>Yes</td>
<td>Yes/Avoid contamination</td>
</tr>
<tr>
<td>Suspected Bacterial Contamination with all blood components/products See Table 1</td>
<td>Yes</td>
<td>Yes/Avoid contamination</td>
</tr>
<tr>
<td>Fever* is the only symptom in Oncology and BMT patients on T8 only, see page 2.</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

DO NOT restart the transfusion
## For Oncology & BMT patients on T8, Oncology Unit, only ***

- **Fever** is the only symptom
- Oncology and BMT patients on T8, oncology unit, only
- For patients receiving RBC, platelet or plasma transfusion only

***This policy does not apply to Hematology Patients e.g. Thalassemia, Sickle Cell or Aplastic Anemia patients

### Restoring a Transfusion in a Febrile Oncology Patient – Reference Guide

**Authorization** for restarting the transfusion in a febrile* patient (see fever definition on top of page one) may be given if:

- temporal temperature is less than 39.5 °C or, **oral** temperature is less than 39°C, **and**
- fever is the **only** symptom, **and**
- the onset of fever is greater than 15 minutes into transfusion, **and**
- clinical condition warrants continuation of current transfusion, **and**
- the physician **performs** a bedside clinical assessment of the patient, **and**
- the physician **writes** an order to restart the transfusion in the patient’s chart, **and**
- after administration of all medications as prescribed by the physician

**Physician Responsibilities:**

1. **Perform** a bedside clinical assessment of the patient, **consider and exclude:**
   - Acute hemolytic Transfusion Reaction (AHTR): fever is the most common symptom of AHTR. **Other symptoms and signs** may include anxiety, pain at lower-mid back or chest, dyspnea, nausea or vomiting. Hematuria or bleeding (DIC) will be late signs, typically hours later. There may be hemodynamic instability or shock, but not invariably. If you have any hesitation, **do not restart** and call TML for support. Send post transfusion reaction patient EDTA sample, see Table 2 on page 1, and await results. Acute hemolysis can occur with red cells, plasma, platelets or IVIG transfusion.
   - Transfusion-associated Sepsis (TAS), see Table 1 on page 1: symptoms and signs of TAS include high fever, chills/rigors, hypotension, nausea, vomiting or circulatory collapse. The fever may be unresponsive to antipyretic medication. TAS is more commonly seen with platelet transfusion than any other component. If suspected, **do not restart**. Call the TML and send EDTA sample, blood cultures and the sterile-stoppered product remnant back to TML, see Table 2 on page 1. Start antibiotics empirically.
   - Transfusion-related acute lung injury (TRALI): symptoms and signs of TRALI include dyspnea, hypoxemia, and possibly hypotension. Check oxygen saturations and supplement as needed. Order chest x-ray and **consider** other investigations. Document fluid balance and cardiovascular exam findings. If suspected, **do not restart**: Call TML, send post reaction EDTA sample, see Table 2 on page 1, and support the patient’s oxygen requirements.

2. **If the above possibilities are excluded**, document findings of bedside clinical assessment, and write an order to restart the transfusion in the patient’s chart.

3. **Write** an order for medication (if necessary).

4. **If the post DAT is newly positive** or there is an increase in the strength of the post DAT, write an order to discontinue the transfusion.

**Nursing Responsibilities:**

Before restarting the transfusion:

1. **Complete** steps 1 to 4 on page 1 of this Reference Guide
2. **Administer** prescribed medication (if ordered), **and**
3. **Collect** EDTA (lavender) sample, for DAT, and **send STAT** to TML, see Table 2 on page 1, **and**
4. **Report** the reaction to TML; even if the transfusion is restarted the suspected reaction must be reported.
5. **Follow** physician directions for restarting the transfusion.
   - **Restart** the transfusion at 1 mL/kg/h, **up to a maximum of 50 mL/h**, for first 15 minutes.
   - **Remain** with, or be in a position to **directly observe**, the patient for the **first 15 minutes** after restart.
6. **Recheck** vital signs 15 & 60 minutes after restart and then hourly for the remainder of the transfusion, **observe** for:
   - response to interventions
   - emerging signs and symptoms
   - deterioration in the patient’s condition
7. **Complete** the transfusion within **4 hours from time of issue** (time of issue is stamped on the Transfusion Record).
8. **Collect & send** first voided post transfusion urine for routine urinalysis; transfusion can be restarted before the sample is collected.

If the temperature is unresponsive to interventions and/or the patient’s condition deteriorates:

1. **Stop** the transfusion if the:
   - patient’s temperature continues to rise one hour post antipyretic administration, **or**
   - patient develops additional signs and symptoms of a transfusion reaction e.g. rigors, hypotension, **or**
   - patient’s condition deteriorates, **or**
   - post transfusion DAT is newly positive **or** there is an increase in the strength **compared to the pre-transfusion DAT**

2. **Refer** to:
   - Page 1 of this document
   - Transfusion Reaction Immediate Management Procedure