**Acute Transfusion Reactions**

If you suspect a transfusion reaction:

1. **Stop**
   - Stop transfusion and activate emergency procedures if required.
2. **Check Vital Signs**
   - Check vital signs.
3. **Maintain Current IV Access**
   - Do not flush existing administration line.
4. **Repeat All Clerical and Identity Checks**
   - Notify medical staff and Transfusion Service Provider.
5. **Collect Blood and Urine Samples**
   - Save blood pack and IV line for culture if required.

### Signs and Symptoms

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Investigations</th>
<th>Causes and Clinical Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 38°C and rise ≥ 1°C from baseline within 4 hours of starting transfusion</td>
<td>No investigation required.</td>
<td>Mild febrile non-haemolytic transfusion reaction</td>
</tr>
<tr>
<td>≥ 38°C and rise ≥ 1°C from baseline within 15 minutes or starting transfusion</td>
<td>Sepsis work-up</td>
<td>Severe febrile non-haemolytic transfusion reaction</td>
</tr>
<tr>
<td>2–3 hours following transfusion</td>
<td>Haemolysis work-up</td>
<td>Transfusion-transmitted bacterial infection</td>
</tr>
<tr>
<td>1–2 hours following transfusion</td>
<td>DIC work-up</td>
<td>Transfusion-transmitted bacterial infection</td>
</tr>
<tr>
<td>6 hours following transfusion (usually within 1–2 hours)</td>
<td>Anaphylaxis work-up</td>
<td>Transfusion-associated circulatory overload</td>
</tr>
<tr>
<td>Over less than 2/3 of the body</td>
<td>No investigation required.</td>
<td>Transfusion-related acute lung injury</td>
</tr>
<tr>
<td>Over more than 2/3 of the body</td>
<td>No investigation required.</td>
<td>Severe allergic reaction</td>
</tr>
<tr>
<td>Over more than 2/3 of the body, within 45 minutes of starting transfusion (majority within 5 minutes)</td>
<td>Anaphylaxis work-up</td>
<td>Severe allergic reaction</td>
</tr>
</tbody>
</table>

### Clinical Management

- If reaction subsides and product still viable, restart transfusion slowly.
- If no improvement or worsening of symptoms, stop transfusion and do not restart, and investigate for a severe febrile reaction.
- If IgA-deficiency with anti-IgA present, consider IgA-deficient or washed red cells.
- To prevent recurrence, consider corticosteroid and antihistamine premedication.
- For further transfusions, consider consultation with a haematologist.

**Fever**

- Signs and symptoms:
  - Fever
  - Over more than 2/3 of the body, within 45 minutes of starting transfusion
  - Dyspnoea
- Investigations:
  - Sepsis work-up
  - Haemolysis work-up
  - DIC work-up
  - Anaphylaxis work-up
- Causes and clinical management:
  - Transfusion-transmitted bacterial infection
  - Transfusion-associated circulatory overload
  - Transfusion-related acute lung injury

**Dyspnoea**

- Signs and symptoms:
  - Dyspnoea
  - Localised urticaria (hives), pruritus with no other symptoms/sgnls.
- Investigations:
  - Assess chest X-ray for pulmonary infiltrates.
- Causes and clinical management:
  - Transfusion-related acute lung injury

**Urteria or rash**

- Signs and symptoms:
  - Urticaria or rash
  - Localised urticaria (hives), pruritus with no other symptoms/sgnls.
- Investigations:
  - Check haptoglobin, tryptase and IgA levels.
- Causes and clinical management:
  - Severe allergic reaction

**Minor allergic reaction**

- Signs and symptoms:
  - Minor allergic reaction
  - Signs and symptoms:
- Investigations:
  - No investigation required.
- Causes and clinical management:
  - Minor allergic reaction

**Severe allergic reaction**

- Signs and symptoms:
  - Severe allergic reaction
  - Signs and symptoms:
- Investigations:
  - No investigation required.
- Causes and clinical management:
  - Severe allergic reaction

**Disseminated intravascular coagulation (DIC)**

- Signs and symptoms:
  - Dyspnoea, upper or lower airway obstruction (hoarseness, stridor, wheezing, chest pain, anxiety)
  - Severe hypertension, bronchospasm, cyanosis
  - GI symptoms (nausea, vomiting)
- Investigations:
  - FBC, LDH, bilirubin, creatinine, urinalysis.
  - DIC work-up
  - Haemolysis work-up
- Causes and clinical management:
  - Transfusion-transmitted bacterial infection
  - Transfusion-related acute lung injury

**Haemolysis**

- Signs and symptoms:
  - Haemolysis
  - Signs and symptoms:
- Investigations:
  - Group, screen and DAT on pre and post-transfusion samples.
- Causes and clinical management:
  - Transfusion-transmitted bacterial infection
  - Transfusion-related acute lung injury

**Antibody responses**

- Signs and symptoms:
  - Antibody responses
  - Signs and symptoms:
- Investigations:
  - Anti-haptoglobin if deficient.
- Causes and clinical management:
  - Anti-haptoglobin if deficient.

**Sepsis**

- Signs and symptoms:
  - Sepsis
  - Signs and symptoms:
- Investigations:
  - FBC, LDH, bilirubin, creatinine, urinalysis.
- Causes and clinical management:
  - Transfusion-transmitted bacterial infection
  - Transfusion-related acute lung injury

**Acute haemolytic transfusion reaction**

- Signs and symptoms:
  - Acute haemolytic transfusion reaction
  - Signs and symptoms:
- Investigations:
  - aPTT, PT, fibrinogen, D-Dimer (or FDP).
- Causes and clinical management:
  - Transfusion-transmitted bacterial infection
  - Acute haemolytic transfusion reaction

**Severe febrile non-haemolytic transfusion reaction**

- Signs and symptoms:
  - Severe febrile non-haemolytic transfusion reaction
  - Signs and symptoms:
- Investigations:
  - aPTT, PT, fibrinogen, D-Dimer (or FDP).
- Causes and clinical management:
  - Severe febrile non-haemolytic transfusion reaction
  - Severe febrile non-haemolytic transfusion reaction

**Transfusion-transmitted bacterial infection**

- Signs and symptoms:
  - Transfusion-transmitted bacterial infection
  - Signs and symptoms:
- Investigations:
  - aPTT, PT, fibrinogen, D-Dimer (or FDP).
- Causes and clinical management:
  - Transfusion-transmitted bacterial infection
  - Transfusion-transmitted bacterial infection

**Transfusion-related acute lung injury**

- Signs and symptoms:
  - Transfusion-related acute lung injury
  - Signs and symptoms:
- Investigations:
  - aPTT, PT, fibrinogen, D-Dimer (or FDP).
- Causes and clinical management:
  - Transfusion-related acute lung injury
  - Transfusion-related acute lung injury