

10 THE MANAGEMENT AND REPORTING OF ADVERSE EVENTS

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10.2 Acute Transfusion Reactions
Section 10
Transfusion Medicine Protocols
Women's & Newborn Health Services
Perth Western Australia

10.2 ACUTE TRANSFUSION REACTIONS

Acute transfusion reactions are defined as reactions that occur during a transfusion or within 24 hours of completion. Symptoms may include:

Pyrexia (>1°C rise in temp and >38°C temp during transfusion or within four hours of transfusion)	
Pruritus	Urticaria
Tachycardia	Hypotension
Lumbar pain	Rigors
Chest pain	Jaundice
Cyanosis	Local pain along the vein
Uncontrolled bleeding due to DIC	haemoglobinuria, oliguria.

IMMEDIATE ACTION

- **STOP THE INFUSION.**
- Keep the line open with 0.9% Saline USP if applicable.
- Check the vital signs.
- Verify all documentation to make sure that the correct unit has been given to the correct patient.
- Notify the clinician immediately.

The attending clinician must assess the patient's condition and take appropriate clinical action.

All observations, actions and treatment must be fully documented in the medical record.

For successfully treated mild allergic and febrile reactions, transfusion may continue with caution once signs and symptoms resolve (provided infusion is completed within 4 hours of initial commencement).

If further signs and symptoms develop **STOP** the transfusion and follow 'Further Action' plan for acute reaction (below)

Further Action for acute reactions, clerical errors or other serious symptoms (including temperature >39°C, hypotension, shock, tachycardia, rigors, chills, dyspnoea, back/chest pain, Haemoglobinurea, oliguria, bleeding from IV sites, nausea, vomiting):

- **Contact the Consultant Haematologist.**
- **Contact the Blood Bank.**

Send a completed [CAHS/WNHS Transfusion Reaction Form](#) to the Blood Bank with **accompanying samples and used/part used blood bag** to ensure the event is recorded and investigated appropriately. (Click link above to download a form or you can obtain a hard copy from the Blood Bank

Collect blood samples away from the site of infusion and as soon as possible after the reaction:

ADULT	PAEDIATRICS	NEONATE (<16 Weeks)
Two 6mL EDTA (Pink top) Two 6mL Clotted (Red top)	6mL EDTA 6mL Clotted (if possible)	1mL EDTA 1mL Clotted (Plus maternal samples if requested)

ALSO COLLECT

- **The first urine sample after the reaction.**
- **The unit causing the reaction with the administration set still attached.**
- **Any other empty bags from units infused immediately before the reaction.**

For severe reactions the Blood Bank **may** request additional patient samples as follows:

- Blood culture
- Subsequent urine samples (free haemoglobin and derivatives)
- 6mL EDTA (plasma haemoglobin)
- 6mL Clotted (haptoglobin)
- 4mL Citrate (coagulation profile & FDPs)
- 1mL Lithium Heparin or Clotted (bilirubin)

ACUTE TRANSFUSION REACTIONS – SUMMARY CHART

The chart on the following page is a summary of the most common symptoms of Acute Transfusion Reactions. It also gives advice on when the Blood Bank should be notified of a reaction.

Summary of Acute Transfusion Reactions

TYPE	SYMPTOMS	CAUSE	COMMENTS	REPORT TO BLOOD BANK
Allergic Reactions	Pruritus, Urticaria. May include wheezing or angioedematous reactions.	Antibodies to plasma proteins or allergens	Occurs during 1-3% of transfusions Mild Administer antihistamines and resume transfusion if symptoms resolve. Severe Discontinue transfusion. Administer antihistamines, hydrocortisone, adrenalin. Consider prophylaxis for future transfusions.	No Yes
Febrile Reactions	Fever > 1°C rise and >38°C during infusion, chills, flushing, headache, vomiting, shortness of breath, hypotension, Anxiety. Fever >39°C	Antibodies to leucocyte antigens Cytokines in stored platelet units	Occurs towards end of infusion or within hours of completion in 1% of transfusions. The incidence is significantly reduced with leucocyte-depleted blood components. Give paracetamol or other antipyretic. Mild Resume transfusion if symptoms resolve Severe Discontinue transfusion. After second recorded reaction, consider prophylactic medication.	No Yes
Acute Intravascular Haemolytic Reaction	Anxiety, chest pain, flank pain, dyspnoea, chills, fever, shock unexplained bleeding, Haemoglobinaemia, Haemoglobinuria, Cardiac arrest.	ABO-incompatible transfusion usually the result of clerical error when samples are drawn or when blood is administered.	Rare. 1 in 12,000-77,000. May occur during first few mLs of transfusion. 10% mortality rate. Consider possibility of renal failure and DIC. Maintain blood pressure and renal perfusion. Seek urgent assistance.	Yes
Anaphylactic Shock	At onset, coughing, bronchospasm, laryngospasm, respiratory distress, vascular instability, Nausea, abdominal cramps, vomiting, diarrhoea, shock and loss of consciousness.	Patient antibodies to donor IgA	Very rare but may be fatal. 1 in 20,000-170,000. Rapid and often during first few mLs of infusion. Treatment: maintain airway and intravenous line. Administer adrenalin and corticosteroids. Treat hypotension. Use components from IgA deficient donors.	Yes
Infective Shock	Onset of high fever, Severe chills, hypotension or circulatory collapse during or soon after transfusion.	Bacterial contamination of blood component	Rare but very severe with high mortality rate. Usually during first 100mL. Treatment: management of septicaemia. Fluids and intravenous antibiotics.	Yes
TRALI	Acute respiratory reaction with fever, tachycardia, hypotension, hypoxia and pulmonary oedema.	Donor plasma containing antibodies to patient leucocytes.	Occurs during or within 6 hours of 1 in 5,000-10,000 transfusions. May be life threatening. Provide cardiovascular and airway support.	Yes