NHS Blood and Transplant

Information for clinicians

Administration of blood components in adults

Important: administration is only to be undertaken by trained and competent, regulated, and registered healthcare professionals.

Effective: 20/11/2020

Selection and use of administration sets

- CE-marked blood transfusion set (170-200µm integral mesh filter)
- The administration set should be changed at least every 12 hours (or in accordance with the manufacturer's instructions)
- A new administration set must be used for platelets
- Peripheral IV, central IV or intraosseous access is suitable
- All devices/equipment must be certified for use with blood components and used in accordance with manufacturer's instructions
- Routine administration rate for each unit is:
  - Red cells: routine administration 90-120 mins per unit. Patients less tolerant of increased blood volume, i.e. at risk of transfusion-associated circulatory overload (TACO), should be transfused more slowly
  - Platelets: routine administration of one adult therapeutic dose (ATD) over 30-60 mins
  - Plasma and cryoprecipitate: routine administration 10–20 mL/kg/h (approximately 30 mins).

Each unit must be completed before the stipulated expiry date/time and within 4 hrs of removal from temp-controlled storage. Rapid administration may be appropriate in major haemorrhage.

Documentation and monitoring

- All bedside transfusion checks must be completed in accordance with local policy, including:
  - Consent and prescription completed
  - Check component integrity and expiry date/time
  - Cross-check tag, unit label, prescription and positively identify the patient (ID band and verbal response)
  - Ensure compatibility of unit with patient group, and that specific requirements are met.
- The patient must be kept under close observation throughout the transfusion
- Patients must be risk-assessed for TACO, using a checklist wherever possible (see overleaf)
- The following must be recorded for each unit transfused:
  - Date and time commenced and completed
  - Donation number
  - Volume administered
  - Observations (check local policy); minimum requirements P, T, BP and RR:
    - Up to 1 hour before the transfusion
    - 15 mins after commencing transfusion
    - Within 1 hour after completion of transfusion.
  - Additional (SaO2, urine output and fluid balance) and increased frequency of observations may be required according to the patient's condition, e.g. risk of TACO identified
  - Any symptoms or complications
  - Final fate (traceability) of component (a requirement by law).

TACO Checklist	Red cell transfusion for non-bleeding patients	If 'yes' to any of these questions
	Does the patient have a diagnosis of 'heart failure' congestive cardiac failure (CCF), severe aortic stenosis, or moderate to severe left ventricular dysfunction? Is the patient on a regular diuretic? Does the patient have severe anaemia?	1 • Review the need for transfusion (do the benefits outweigh the risks)?
	Is the patient known to have pulmonary oedema? Does the patient have respiratory symptoms of undiagnosed cause?	2 • Can the transfusion be safely deferred until the issue can be investigated, treated or resolved?
	Is the fluid balance clinically significantly positive? Is the patient on concomitant fluids (or has been in the past 24 hours)? Is there any peripheral oedema? Does the patient have hypoalbuminaemia? Does the patient have significant renal impairment?	3 • Consider body weight dosing for red cells (especially if low body weight) • Transfuse one unit (red cells) and review symptoms of anaemia • Measure the fluid balance • Consider giving a prophylactic diuretic • Monitor the vital signs closely, including oxygen saturation

Due to the differences in adult and neonatal physiology, babies may have a different risk for TACO. Calculate the dose by weight and observe the notes above.

S Narayan (Ed) D Poles et al. on behalf of the Serious Hazards of Transfusion (SHOT) Steering Group. The 2018 Annual SHOT Report (2019)

Management of transfusion reactions

Immediate actions

- Inform medical staff immediately
- Pause the transfusion (discontinue if severe)
- Assess and maintain airway, breathing and circulation (ABC)
- Maintain venous access
- Confirm positive patient ID & check compatibility of the component.

Additional actions

- Perform and monitor patient observations:
  - Temperature
  - Pulse and respiration rate
  - Blood pressure
  - Urine output
  - O2 saturations.
- Review and monitor fluid balance
- Retain component bag and administration set
- Inform your transfusion practitioner and/or transfusion laboratory
- Document in patient notes
- Further management in accordance with local policy.

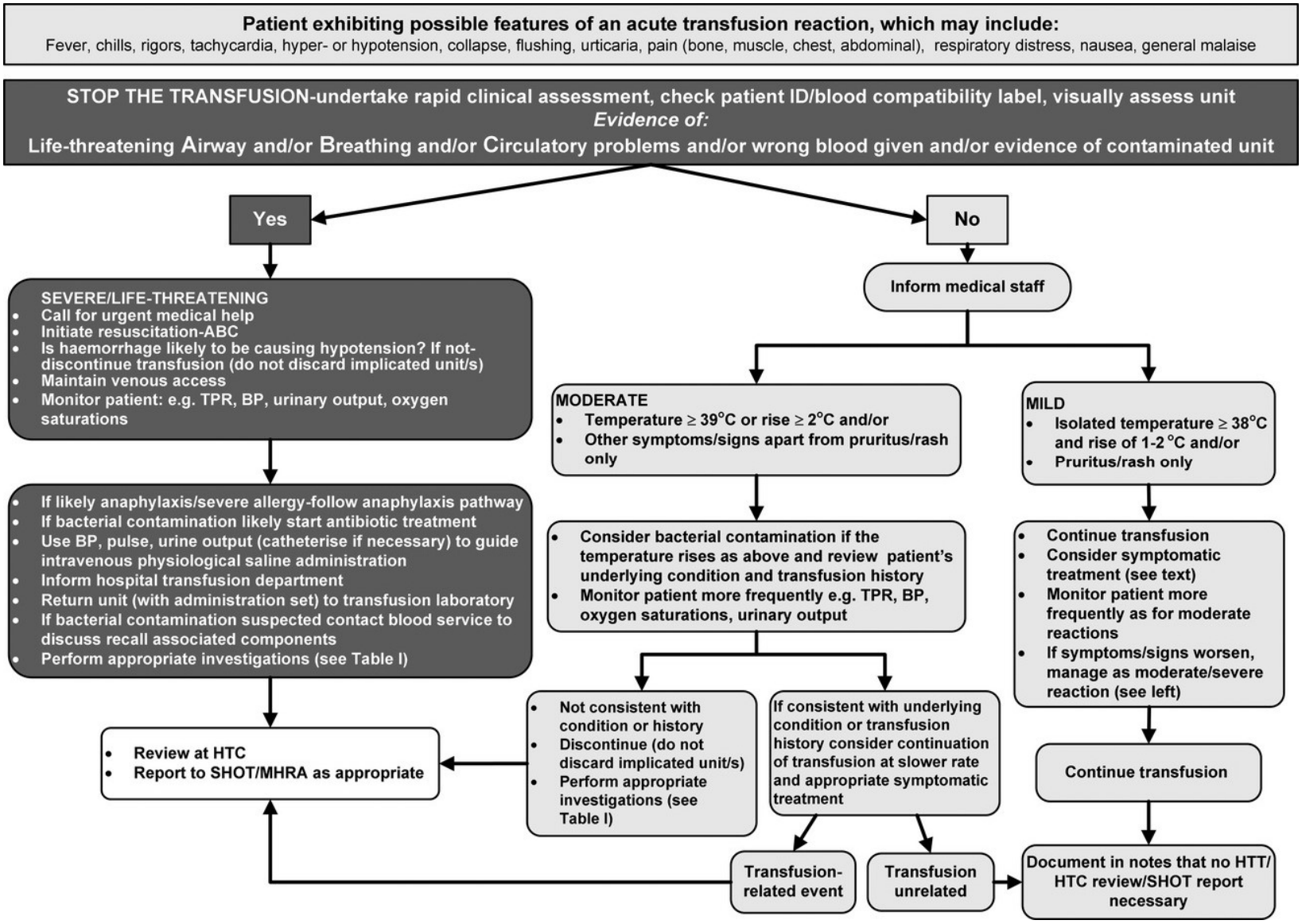
Dependent on the type and severity of the reaction, it may be appropriate to continue the transfusion (slow rate if required). Guidance is available from your local transfusion team. The patient will require close monitoring for any further deterioration.

Suggested investigations

- Full blood count (FBC), blood film
- Coagulation screen (including fibrinogen)
- Urea and electrolytes
- Liver function tests (including bilirubin)
- Lactate dehydrogenase (LDH) and haptoglobin
- Repeat group, screen and crossmatch
- Direct antiglobulin test (DAT) on patient and component
- Patient blood cultures (peripheral and via central line if applicable)
- Urine test for presence of haemoglobin.

Other investigations (depending on symptoms and reaction type)

- Glucose
- Blood gases
- Chest X-ray
- IgA level
- IgE level / mast cell tryptase
- Component blood cultures (in discussion with NHSBT – usually done at central reference laboratory).



Tinegate, H. et al. 2012. Guideline on the investigation and management of acute transfusion reactions Prepared by the BCSH Blood Transfusion Task Force.