

Identification and treatment of transfusion reactions

A collaborative regional approach



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Why did we need a regional guideline?

- Many medical and nursing staff move around hospitals within the region. Different practices in each hospital – potential delay and confusion
- A need for prompt recognition and treatment of transfusion reactions
- Standardised, familiar practice within the region

Aim of the guideline

- Not to rewrite national guidelines, but distil the information to maintain consistency across the region
- Provide an easily recognised and accessible tool for clinical staff
- The Regional Transfusion Team set a remit for an instantly identifiable regional algorithm.

What type of Guideline did we want?

- Based on the British Committee for standards in Haematology (BCSH) guidelines on the Investigation and management of Acute transfusion reactions 2012
- Must contain the relevant immediate clinical information
- Multifunctional tool hospitals could adapt to their individual practices.
- Concise easy reference algorithm

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*Make it clear,
concise and
specific.*

Formulating the Guideline



- Collaborative regional approach
- Working group formed within the Transfusion Practitioner network to summarise the BCSH guidance
- Found many hospitals were using similar adapted versions of BCSH guidelines – decision to standardise and ‘personalise’ for the region.
- Algorithm produced
(2 sided A4 document)
- Accompanying guideline document written, but not implemented at present.

Acute transfusion reactions (ATR)

Telephone numbers: Transfusion laboratory

Haem. consultant

Is my patient having an acute transfusion reaction? Features may include:

fever, chills, rigors, tachycardia, hyper- / hypo-tension, collapse, flushing, urticaria, pain (bone, muscle, chest, abdominal), respiratory distress, nausea, general malaise

STOP THE TRANSFUSION – **Assess** (rapid clinical assessment), **Check** (patient ID / blood compatibility label), **Inspect** (look for turbidity, clots, discoloration)

Evidence of life threatening problems? Airway / Breathing / Circulatory problems, and/or wrong blood given and/or evidence of contaminated unit?

Yes

Severe or life threatening

- Call for urgent medical help
- Initiate resuscitation – ABC
- Maintain venous access
- Monitor patient, eg. TPR, BP, urinary output, O₂ saturations
- Fluid resuscitate (normal 0.9% saline) as appropriate guided by BP, pulse, urine output (catheterise if necessary)
- Perform appropriate investigations as per guidelines

- If likely anaphylaxis / severe allergy; follow anaphylaxis pathway
- If bacterial contamination likely follow sepsis pathway
- If haemorrhage likely to be causing hypotension fluid resuscitate / continue transfusion
- Consider if Transfusion Associated Circulatory Overload likely

Report urgently to transfusion laboratory
for review at HTC and report to SHOT/MHRA as appropriate

No

Inform medical staff

Moderate

- Temperature $\geq 39^{\circ}\text{C}$ or rise $\geq 2^{\circ}\text{C}$ and/or
- Other symptoms (not pruritis / rash only)

- Review patient's underlying condition and **transfusion history**
- Monitor patient more frequently, eg. TPR, BP, O₂ saturations, urinary output

Not consistent with condition or history
Consider bacterial contamination and undertake appropriate investigations

Discontinue transfusion

Consistent with condition or history
Consider continuation of transfusion at slower rate and appropriate symptomatic treatment

If transfusion related

Mild

- Isolated temp $38-39^{\circ}\text{C}$ or rise $1-2^{\circ}\text{C}$
- Pruritis / rash only

- Consider symptomatic treatment
- Monitor patient more frequently as for moderate reactions
- If symptoms worsen, manage as for moderate / severe reaction

Continue transfusion

Document in notes.
Report only if recurrent

If transfusion is discontinued, **DO NOT** discard unit but return with administration set to transfusion lab

Acute transfusion reactions (ATR)

Safe transfusion practice – Be careful, be vigilant

All patients who have a blood component transfusion are at risk of an ATR

- Patients receiving a transfusion must be in a clinical area monitored by trained staff competent to manage transfusion and ATR
- **Check** 'Right patient, right blood'. **Confirm** patient identity with patient, **check** patient ID band **check** component compatibility label
- Inspect:** **Examine** component bag for abnormal appearance (clumps, particles or discolouration). **Check** IV cannula site for infection
- Monitor:** **Measure** patient's vital signs before transfusion, during transfusion and after transfusion
- Inform:** **Ask** patient to report any new symptoms or signs during transfusion and within **24 hours** of transfusion

Signs and symptoms of ATR

- Fever, chills, rigors
- Myalgia
- Nausea
- Mouth or throat tingling or swelling (angioedema)
- Hypotension
- Hypoxia
- Acute bleeding from mouth, rectum, bladder, wounds
- Breathlessness or noisy breathing (stridor or wheeze)
- Pain
- Signs of anaphylaxis
- Severe anxiety or sense of impending doom
- Skin rashes or itch

Management

Stop transfusion immediately • ABC • Oxygen • Get medical help urgently

Suspect	If symptoms of	Treat	Investigate
Anaphylaxis	<ul style="list-style-type: none">• Wheeze• Swelling• Pain• Hypotension• Collapse	Anaphylaxis pathway Give intramuscular adrenaline Consider chlorpheniramine • hydrocortisone • salbutamol	<ul style="list-style-type: none">• FBC, U&E, LFT, coagulation screen• First urine sample (haemoglobin)• Repeat blood group screen and save• IgA level (EDTA)
ABO incompatibility or sepsis (infection)	<ul style="list-style-type: none">• Fever• Rigors• Tachycardia• Hypotension• Anxiety• Pain• Breathlessness	IV saline Sepsis pathway (if sepsis) IV broad spectrum antibiotics (if sepsis)	<ul style="list-style-type: none">• Serial mast cell tryptase at time 0, 3h, 24h (plain tube)• Blood cultures (if sepsis suspected)• Consider CXR if breathlessness present
TACO or TRALI	<ul style="list-style-type: none">• Acute breathlessness• Hypoxia	Furosemide (if TACO)	

Report to laboratory all severe reactions • return blood component to laboratory • complete report / incident form

How is the guideline used?

Multifunctional - Up to individual hospitals how to utilise

- Laminated posters
- Electronic version on intranet
- Incorporation in Trust policies
- Hand-outs
- Part of Blood Transfusion chart / care pathway
- Available at Blood fridge
- Training presentations
- In resource packs
- Available to access through transfusionguidelines.org.uk



Outcome

- All Hospitals in the region use the guideline as part of their practice
- Staff moving around the region now have familiar, standardised documentation and guidance to use
- Quick reference clinical decision making tool
- Highlighted identification and treatment of transfusion reactions in the region
- Promotes improved patient safety

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Consultant Anaesthetist

Chair East of England Regional Transfusion Committee

- **Jane O'Brien**

East of England Regional Transfusion Committee Administrator

- **East of England Transfusion Practitioner's Network**

Sharing practice

- The Regional Transfusion committee are happy for the algorithm to be used by other Hospitals and groups upon acknowledgement of the committee.
- www.transfusionguidelines.org.uk
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 - ➔ East of England
 - ➔ Policies
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