British Committee for the Standards in Haematology (BCSH) - Blood Transfusion Guidelines

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Patient Blood Management: optimising the care of patients who may need transfusion
British Committee for Standards in Haematology

- Who are they?
- What do they do?
- The guideline development process
- The future
Who are the BCSH?

- The BCSH is a sub-committee of the British Society for Haematology (BSH)
- The BCSH consists of 4 Task Forces:
  - Haemato-oncology
  - General Haematology
  - Haemostasis and Thrombosis
  - Blood Transfusion
- There is also a fifth Task Force:
  - Laboratory and Clinical Practice Committee, which provides guidance on aspects of haematological clinical and laboratory practice not covered by the other Task Forces.
What do they do?

- **Primary purpose:**
  - To produce evidence based guidelines

- Guidelines are drafted by writing groups following specific guideline writing procedures

- **Involves:**
  - all relevant stakeholders
  - A wide range of experts
  - Where suitable, patient groups

- Final guideline reviewed by both:
  - The Task Force and
  - The Sounding Board:
    - Consultant Haematologists
    - Clinical Scientists
    - Professional bodies
Approval for guideline development from BCSH

Writing group members identified and agreed by BCSH

Literature review

Draft guideline produced

Draft guideline reviewed by the BCSH Transfusion Taskforce

Not Approved

Re-draft guideline

Approved

Draft guideline reviewed by the Sounding Board

Major changes needed?

Yes

Make minor alterations as required

No

FINAL VERSION

Adapted from the BCSH Flowcharts for Initiating and Developing a Guideline (www.bcshguidelines.com)
Evidence levels and grades of recommendations

- Pre 2010: US Agency for Health Care Policy and Research (AHCPR)
- Post 2010: Grading of Recommendations Assessment, Development and Evaluation (GRADE)
  - Strong (grade 1): are made when there is confidence that the benefits do or do not outweigh harm and burden. These recommendations can be applied uniformly to most patients. Regard as 'recommend'.
  - Weak (grade 2): where the magnitude of benefit or not is less certain a weaker grade 2 recommendation is made. These recommendations require judicious application to individual patients. Regard as ‘suggest’.
Guidelines for Neonates and Children

- Transfusion guidelines for neonates and older children (2004)
  - Replaced the 1994 guideline
- 2005 Amendment to the guidelines on transfusion for neonates and older children
- 2007 amendment to the transfusion guidelines for neonates and older children
- Guideline is currently being revised
Transfusion Guidelines for neonates and older children (2004)

• Covers:
  – Blood and blood component specification
  – Intrauterine transfusion
  – Neonatal transfusion
  – Transfusion support for children with haemoglobinopathies
  – Transfusion support for haemopoietic SCT, aplastic anaemia and malignancies
  – Transfusion support for cardiac surgery, ECMO and acquired coagulopathies
  – Autologous transfusion in children
  – Blood handling and administration
Blood and blood component specification

• Donations:
  – donors who have given at least once within the past 2 years
  – negative for all mandatory microbiological markers

• Cytomegalovirus (CMV):
  – CMV negative components for first year or life
  – Those at greatest risk of transfusion transmitted CMV:
    • Fetuses and infants weighing under 1.5kg
    • Immunodeficient patients
    • Stem cell transplant recipients
Blood and blood component specification

• Irradiation:
  – Intrauterine transfusion (IUT)
  – Exchange transfusion of red cells after IUT
  – Top-up transfusion after IUT
  – Donation from a 1\textsuperscript{st} or 2\textsuperscript{nd} degree relative or a Human Leucocyte antigen (HLA) selected donor
  – Proven or suspected immunodeficiency
Component volumes to be transfused

- Red cells:
  - Exchange:
    - Term infant 80-160ml/kg
    - Preterm infant 100-200ml/kg
  - Top-up transfusion usually 10-20ml/kg

- Platelets:
  - Children (<15kg) 10-20ml/kg

- Fresh Frozen Plasma:
  - 10-20ml/kg

- Cryoprecipitate:
  - Children (<15kg) 5ml/kg
2005 Amendment

- Anti D prophylaxis is required if RhD +ve platelets are transfused to an RhD-ve child (dosage guidance given)
- The RhD status of FFP is not significant
2007 Amendment

- Previous specification for imported FFP restricted donors to those who had virology testing within the previous 2 years
- This specification was relaxed to include first time donors because of the additional virus inactivation steps performed on imported plasma
The New Guidelines: Draft

- Within parameters set by Cochrane
- Not too complex
- Further studies
  - Effects of Transfusion Thresholds on Neurocognitive Outcome (ETTNO)
    - 920 VLWB infants randomised
# Red Cells

<table>
<thead>
<tr>
<th>Postnatal age</th>
<th>Suggested transfusion threshold Hb (g/L)</th>
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<tbody>
<tr>
<td></td>
<td>Ventilated</td>
</tr>
<tr>
<td>1st 24 hours</td>
<td>&lt; 120</td>
</tr>
<tr>
<td>&lt; week 1 (day 1-7)</td>
<td>&lt; 120</td>
</tr>
<tr>
<td>week 2 (day 8 - 14)</td>
<td>&lt; 100</td>
</tr>
<tr>
<td>≥ week 3 (≥ day 15)</td>
<td></td>
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</tbody>
</table>
Platelets

- Platelet count < 20 - 30 x10⁹/l
  Neonates with no bleeding (NAIT if no bleeding and no family history of ICH: 30 x10⁹/l).

- Platelet count < 50 x10⁹/l
  Neonates with bleeding, current coagulopathy, surgery or exchange transfusion, infants with NAIT if previously affected sibling with ICH

- Platelet count < 100 x10⁹/l
  Neonates with major bleeding or requiring major surgery (e.g. neurosurgery)
FFP

- FFP may be of benefit in neonates with active bleeding/prior to surgery who have abnormal coagulation
  - PT or APTT > than 1.5 times the mid-point of the gestational and postnatal age-related reference range (taking into account local reference ranges where available)
  - no evidence to support the use of FFP to try to correct abnormalities of the coagulation screen alone
- FFP should not be used for simple volume replacement
- Prophylactic FFP should not be administered to non-bleeding children with minor prolongation of the PT or APTT

THINK CAREFULLY
Prescribing transfusion volumes

• mL NOT ‘Units’
• Neonates often 10-20ml/kg
• ‘Transfusion formula’
  – NB new Hb units (g/L – prev g/dL)

Volume (ml) = Desired Hb (g/L) – actual Hb (g/L) x weight (kg) x factor (4)
SaBTO

- Recommendations re CMV neg
  - neonates up to 44 weeks corrected gestational age
- Neonatal / Infant Specification
  - use up to 6 months
- MB Cryo
  - no AB
  - recommend group A alternative
    - note not HT tested
Remember.....

• These are only guidelines and can be interpreted in different ways
• Please ensure you know how they have been incorporated into your Trust policies
• Review your Trust policy once the new guidelines are released