Transfusion of Blood Components for Neonates

This summary guidance should be used in conjunction with the 2016 BSH Guidelines (and 2020 Addendum).†

Red cells for top-up transfusions
- Studies support restrictive transfusion thresholds.

Suggested transfusion thresholds for preterm neonates

<table>
<thead>
<tr>
<th>Postnatal age</th>
<th>Suggested transfusion threshold Hb (g/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ventilated</td>
</tr>
<tr>
<td>1st 24 hours</td>
<td>&lt;120</td>
</tr>
<tr>
<td>≤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 onwards)</td>
<td>&lt;100</td>
</tr>
</tbody>
</table>

Table applies to very preterm babies (<32 weeks); for later preterm/term babies the values for babies off oxygen may be used.

*It is accepted that clinicians may use up to 85 g/L depending on clinical situation.

**NIPPV, non-invasive positive pressure ventilation.

- Generally transfuse 15 mL/kg for non-bleeding neonates.
- Where the term or preterm neonate does not require resuscitation, undertake delayed cord clamping.
- Minimise phlebotomy where possible, using small volume samples.
- Ensure that paedipacks are available for emergency use by maternity and neonatal units.
- Transfuse red cells for large volume neonatal and infant transfusion before the end of Day 5.
  Transfusion rate: 5mL/kg/hr.


Further information will be available on hospital intranet sites or from the blood transfusion laboratory.

Further supplies of this bookmark can be ordered by accessing https://hospital.nhsbtleaflets.co.uk
Platelets

- For preterm neonates with platelets <25 x10^9/L, transfuse platelets and treat the underlying cause of thrombocytopenia. For non-bleeding neonates platelet transfusions should not be routinely administered if platelet count is ≥25 x 10^9/L.

Suggested transfusion thresholds for preterm neonates

<table>
<thead>
<tr>
<th>Platelet count (x10^9/L)</th>
<th>Indication for platelet transfusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;25</td>
<td>Neonates with no bleeding (including neonates with NAIT if no bleeding and no family history of ICH).</td>
</tr>
<tr>
<td>&lt;50</td>
<td>Neonates with bleeding, current coagulopathy, before surgery, or infants with NAIT if previously affected sibling with ICH.</td>
</tr>
<tr>
<td>&lt;100</td>
<td>Neonates with major bleeding or requiring major surgery (e.g. neurosurgery).</td>
</tr>
</tbody>
</table>

Table applies to preterm babies; clinicians may also choose to use for term babies. NAIT, neonatal immune thrombocytopenia; ICH, intracranial haemorrhage.

Typical transfusion volume: 10-20 mL/kg; rate 10-20 mL/kg/hr.

Fresh frozen plasma and cryoprecipitate

Routine coagulation screening is inappropriate: results are difficult to interpret in neonates and routine testing may lead to increased FFP transfusion without benefit.

- **FFP should not be used routinely to try to correct abnormalities of the coagulation screen alone in non-bleeding neonates.**
- **FFP may be of benefit in neonates with clinically significant bleeding or prior to invasive procedures with risk of significant bleeding, and who have abnormal coagulation (PT/APTT significantly above the gestational and postnatal age-related range).**
- **FFP should not be used for simple volume replacement or routinely for prevention of IVH.**
- **Cryoprecipitate should not be used routinely for non-bleeding neonates with decreased fibrinogen. It may be considered for fibrinogen <1g/L for surgery at risk of significant bleeding or to critical sites.**

Typical transfusion volumes: FFP 15-20 mL/kg, cryo 5-10 mL/kg; rate 10-20 mL/kg/hr.