Blood and Transplant

### Summary of Guidelines for the Use of Platelet Transfusions in a Platelet Shortage

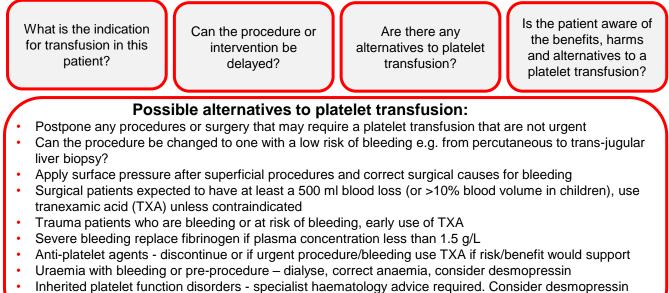
#### British Society for Haematology Guideline (2016) Adults

British Society for Haematology Guideline (2016 & 2020 addendum) Children, Neonates

#### Platelet transfusion: principles, risks, alternatives and best practice

Platelet transfusions are an essential component in the management of selected patients with thrombocytopenia. However, they need to be used judiciously as they are a limited resource and are not risk free.

### Prior to prescribing a platelet transfusion consider:



Chronic Bone Marrow Failure with bleeding – consider TXA

# Indications for use of platelet transfusions in adults and children (RED ALERT)

Indication	Transfusion indicated (threshold)/ not indicated	
Prophylactic use (No bleeding or WHO grade 1)		
Any cause without additional risk factors for bleeding	NOT INDICATED	
Prophylactic use in presence of risk factors for bleeding (e.g. sepsis, abnormalities of haemostasis)		
Reversible or chronic bone marrow failure or critical care – consultant review required	10 to 20 x 10 <sup>9</sup> /L	
<ul> <li>Abnormal platelet function, platelet consumption/destruction (e.g. TTP), immune thrombocytopenia</li> </ul>	NOT INDICATED	
Pre-procedure (Emergency or urgent procedures only)		
<ul> <li>Central venous catheter (CVC) tunnelled or untunnelled (excluding PICC line)</li> <li>Lumbar puncture*</li> <li>Percutaneous liver biopsy</li> <li>Major surgery</li> <li>Epidural anaesthesia, insertion &amp; removal</li> <li>Neurosurgery or ophthalmic surgery involving the posterior segment of the eye</li> </ul>	20 x 10 <sup>9</sup> /l 40 x 10 <sup>9</sup> /l 50 x 10 <sup>9</sup> /l 50 x 10 <sup>9</sup> /l 80 x 10 <sup>9</sup> /l 100 x 10 <sup>9</sup> /l	
<ul> <li>Bone marrow aspirate or trephine biopsies, PICC line insertion, traction removal of central venous catheters (CVCs), cataract surgery, other procedures with low-risk of bleeding</li> </ul>	NOT INDICATED	
Therapeutic use (Bleeding WHO grade 2 or above)		
<ul> <li>Severe bleeding</li> <li>Multiple trauma, brain or eye injury, spontaneous intracerebral haemorrhage</li> <li>Bleeding (WHO grade &gt;2) but not severe</li> <li>Bleeding in specific clinical conditions – see table next page for indications</li> </ul>	50 x 10º/L 100 x 10º/L 30 x 10º/L	

## Indications for use of platelet transfusions in neonates (RED ALERT)

	Transfusion indicated (threshold)/ not indicated	
Prophylactic use (No bleeding or WHO grade 1)		
<ul> <li>Neonate (including very pre-term)</li> <li>Neonate with NAIT (no family history of ICH)</li> </ul>	25 x 10 <sup>9</sup> /L 25 x 10 <sup>9</sup> /L	
Prophylactic use in presence of risk factors for bleeding (e.g. sepsis)		
<ul> <li>Preterm neonate with sepsis</li> <li>Neonate with NAIT (Family history of ICH)</li> </ul>	25 x 10 <sup>9</sup> /L 50 x 10 <sup>9</sup> /L	
Pre-procedure (Emergency or urgent procedures only)		
<ul> <li>Lumbar puncture*</li> <li>Major surgery</li> <li>Neurosurgery</li> </ul>	40 x 10 <sup>9</sup> /l 100 x 10 <sup>9</sup> /l 100 x 10 <sup>9</sup> /l	
Procedures with low-risk of bleeding	NOT INDICATED	
Therapeutic use (Bleeding WHO grade 2 or above)		
Severe bleeding	100 x 10 <sup>9</sup> /L	
Specific clinical conditions		
Platelet function defect		
<ul> <li>Congenital – Pre-procedure or therapeutic use. When alternative therapy contraindicated or ineffective. Directed by specialist in haemostasis.</li> <li>Acquired (anti-platelet agents, uraemia)- only indicated for severe bleeding</li> </ul>	Count Variable	
Disseminated intravascular bleeding		
<ul> <li>Pre-procedure or therapeutic use. Consider threshold counts above but may not be achievable and individual case review required</li> </ul>	Use pre-procedure or therapeutic threshold as guide	
Thrombotic thrombocytopenic purpura	•	
Platelet transfusion contraindicated unless life-threatening bleeding		
Immune thrombocytopenia (excluding NAIT)		
<ul> <li>(ITP, HIT, PTP). Pre-procedure when other therapy ineffective or procedure urgent or to treat severe bleeding. Consider threshold counts above but may be unachievable or unnecessary and individual case review required</li> </ul>	Use pre-procedure or therapeutic threshold as guide	
Footnotes		
*It is accepted that prior to lumbar puncture some clinicians will transfuse platelets at higher counts (e.g. $50 \times 10^9$ /L) in clinically unstable children, non ALL patients, or for the first LP in newly-diagnosed ALL patients to avoid haemorrhage and cerebrospinal fluid contamination with blasts, or at lower counts ( $\leq 20 \times 10^9$ /L) in stable patients with ALL, depending on the clinical situation. These practices emphasise the importance of considering the clinical setting and patient factors.		
Abbreviations		
ALL acute lymphocytic leukaemia; BMF bone marrow failure; DIC Disseminated intravascular coagulation; HIT heparin- induced thrombocytopenia; ICH intracranial haemorrhage; ITP primary immune thrombocytopenia; LP lumbar puncture; NAIT neonatal alloimmune thrombocytopenia; PICC peripherally inserted central catheter; PTP post-transfusion purpura; TTP thrombotic thrombocytopenic purpura:		