Summary of Guidelines for the Use of Platelet Transfusions

A British Society for Haematology Guideline (2016) -Appendix 1

To read the full guideline please go to https://b-s-h.org.uk/guidelines/guidelines/use-of-platelet-transfusions/

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.

Classification of conditions which may require platelet transfusion	Platelet transfusion: Indication categories and contraindications
Bone marrow failure (BMF). Reversible associated with treatable disease and/or chemotherapy and occasionally chronic (irreversible) BMF e.g. myelodysplastic syndromes	**Prophylactic (WHO bleeding grade 0 or 1)** to prevent bleeding > Routine use in non-bleeding patients > In the presence of additional risk factors for bleeding e.g. sepsis or abnormalities of haemostasis
Peripheral platelet consumption/destruction e.g. disseminated intravascular coagulation and immune thrombocytopenia	**Pre-procedure** to prevent bleeding expected to occur during surgery/invasive procedure
Thrombocytopenia in critical care	**Therapeutic (WHO bleeding grade >2)** to treat active bleeding
Abnormal platelet function. Inherited or acquired disorders e.g. anti-platelet agents, uraemia	**Contraindications to platelet transfusion unless life-threatening haemorrhage** Thrombotic Thrombocytopenic Purpura (TTP)

Risks associated with platelet transfusion

Reduced effectiveness of future platelet transfusion

Alloimmunisation

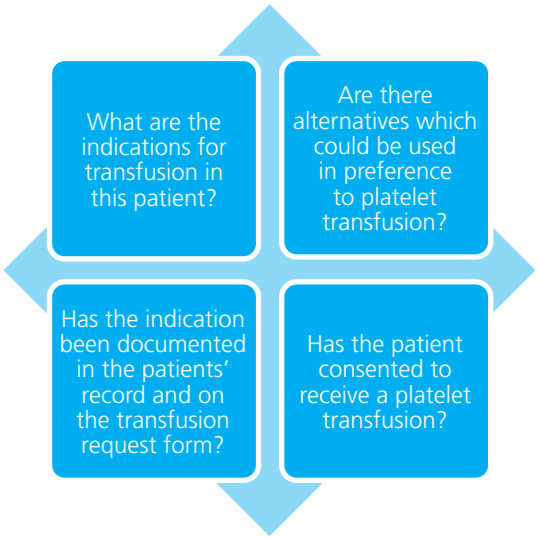
Adverse effects

Febrile non-haemolytic transfusion reactions (FNHTR) and allergic reactions (including mild), reported incidence up to 3%. May require investigation to exclude other causes and prolong hospital stay.

Estimated risk of moderate/severe reactions and infection transmission:

FNHTR	• 1 in 6,000
Allergic	• 1 in 6,000
Haemolysis	• 1 in 600,000
Bacterial sepsis	• Rare since bacterial screening 2010
Transfusion Related Acute Lung Injury	• Less than 1 in 1,000,000
Hepatitis B infection	• 1 in 1,000,000
Hepatitis C infection	• 1 in 30,000,000
HIV infection	• 1 in 7,000,000

Prior to prescribing a platelet transfusion consider:



Possible alternatives to platelet transfusion:

- Apply surface pressure after superficial procedures and correct surgical causes for bleeding
- Surgical patients expected to have at least a 500 ml blood loss, use tranexamic acid (TXA) unless contraindicated
- Trauma patients who are bleeding/ at risk of bleeding, early use of TXA
- Severe bleeding replace fibrinogen if plasma concentration less than 1.5 g/L
- Anti-platelet agents – discontinue or if urgent procedure/bleeding use TXA if risk/benefit would support Uraemia with bleeding or preprocedure – dialyse, correct anaemia, consider desmopressin
- Inherited platelet function disorders – specialist haematology advice required. Consider desmopressin
- Chronic BMF with bleeding – consider TXA

Indications for use of platelet transfusions in adults

Indication	Transfusion indicated (threshold)/not indicated
Prophylactic use (No bleeding or WHO grade 1) One adult dose required	
- Reversible bone marrow failure (BMF) including allogeneic stem cell transplant	10 x 10^9/L
- Reversible BMF with autologous stem cell transplant (consider no prophylaxis)	10 x 10^9/L
- Critical illness	10 x 10^9/L
- Chronic BMF receiving intensive therapy	10 x 10^9/L
- Chronic BMF to prevent persistent bleeding of grade > 2	Count variable
- Chronic stable BMF, abnormal platelet function, platelet consumption/ destruction (e.g. DIC, TTP) or immune thrombocytopenia (ITP, HIT, PTP)	Not indicated
Prophylactic use in the presence of risk factors for bleeding (e.g. sepsis, antibiotic treatment, abnormalities of haemostasis)	
- Reversible/chronic bone marrow failure or critical care	10 to 20 x 10^9/L
- Abnormal platelet function, platelet consumption/destruction, immune thrombocytopenia	Not indicated
Platelet transfusion preprocedure	
- Central venous catheter (CVC) excluding PICC line	20 x 10^9/L
- Lumbar puncture	40 x 10^9/L
- Percutaneous liver biopsy	50 x 10^9/L
- Major surgery	50 x 10^9/L
- Epidural anaesthesia, insertion & removal	80 x 10^9/L
- Neurosurgery or ophthalmic surgery involving the posterior segment of the eye	100 x 10^9/L
Bone marrow aspirate or trephine biopsies, PICC line insertion, traction removal of central venous catheters (CVCs), cataract surgery	Not indicated
Specific clinical conditions preprocedure–see below for indications	
Therapeutic use (Bleeding WHO grade 2 or above)	
-Severe bleeding	50 x 10^9/L
-Multiple trauma, brain or eye injury, spontaneous intracerebral haemorrhage	100 x 10^9/L
-Bleeding (WHO grade >2) but not severe	30 x 10^9/L
-Bleeding in specific clinical conditions – see the next table for indications	

Specific clinical conditions	
Platelet function defect	
- *Congenital* – Preprocedure or therapeutic use. When alternative therapy contraindicated or ineffective. Directed by specialist in haemostasis. - *Acquired* (anti-platelet agents, uraemia)- only indicated for severe bleeding	Count Variable
Disseminated intravascular bleeding	
Preprocedure or therapeutic use. Consider threshold counts above but may not be achievable and individual case review required	Use preprocedure or therapeutic threshold as guide
Thrombotic thrombocytopenic purpura	
Platelet transfusion contraindicated unless **life-threatening bleeding**	Count Variable
Immune thrombocytopenia	
(ITP, HIT, PTP). Preprocedure when other therapy ineffective/procedure urgent or to treat severe bleeding. Consider threshold counts above but may be unachievable or unnecessary and individual case review required	Use preprocedure or therapeutic threshold as guide
Abbreviations	
Disseminated intravascular coagulation (DIC), peripherally inserted central catheter (PICC), thrombotic thrombocytopenic purpura (TTP), primary immune thrombocytopenia (ITP), heparin-induced thrombocytopenia (HIT), post-transfusion purpura (PTP)	