

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 <http://www.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 <ul style="list-style-type: none"> ➤ 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

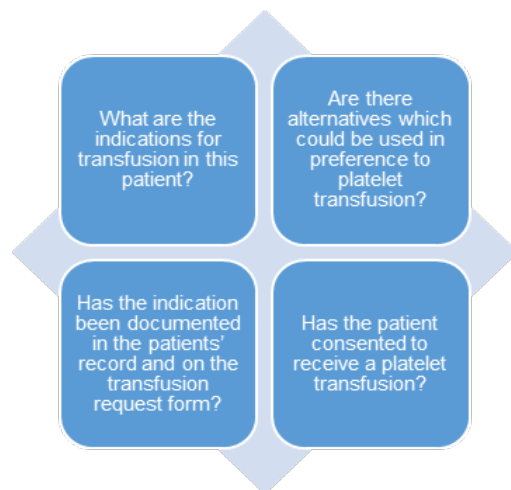
Adverse effects

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
<p>Prophylactic use (No bleeding or WHO grade 1) One adult dose required</p> <ul style="list-style-type: none"> - Reversible bone marrow failure (BMF) including allogeneic stem cell transplant - Reversible BMF with autologous stem cell transplant (consider no prophylaxis) - Critical illness - Chronic BMF receiving intensive therapy - Chronic BMF to prevent persistent bleeding of grade > 2 - Chronic stable BMF, abnormal platelet function, platelet consumption/ destruction (e.g. DIC, TTP) or immune thrombocytopenia (ITP, HIT, PTP) 	<p>10 x 10⁹/L 10 x 10⁹/L 10 x 10⁹/L 10 x 10⁹/L Count variable Not indicated</p>
<p>Prophylactic use in the presence of risk factors for bleeding (e.g. sepsis, antibiotic treatment, abnormalities of haemostasis)</p> <ul style="list-style-type: none"> - Reversible/chronic bone marrow failure or critical care - Abnormal platelet function, platelet consumption/destruction, immune thrombocytopenia 	<p>10 to 20 x 10⁹/L Not indicated</p>
<p>Platelet transfusion preprocedure</p> <ul style="list-style-type: none"> - Central venous catheter (CVC) excluding PICC line - Lumbar puncture - Percutaneous liver biopsy - Major surgery - Epidural anaesthesia, insertion & removal - Neurosurgery or ophthalmic surgery involving the posterior segment of the eye <p>Bone marrow aspirate or trephine biopsies, PICC line insertion, traction removal of central venous catheters (CVCs), cataract surgery</p>	<p>20 x 10⁹/l 40 x 10⁹/l 50 x 10⁹/l 50 x 10⁹/l 80 x 10⁹/l 100 x 10⁹/l Not indicated</p>
<p>Specific clinical conditions preprocedure– see below for indications</p>	
<p>Therapeutic use (Bleeding WHO grade 2 or above)</p> <ul style="list-style-type: none"> - Severe bleeding - Multiple trauma, brain or eye injury, spontaneous intracerebral haemorrhage - Bleeding (WHO grade >2) but not severe - Bleeding in specific clinical conditions – see the next table for indications 	<p>50 x 10⁹/L 100 x 10⁹/L 30 x 10⁹/L</p>
<p>Specific clinical conditions</p>	
<p>Platelet function defect</p>	
<ul style="list-style-type: none"> - <i>Congenital</i> – Preprocedure or therapeutic use. When alternative therapy contraindicated or ineffective. Directed by specialist in haemostasis. - <i>Acquired</i> (anti-platelet agents, uraemia)- only indicated for severe bleeding 	<p>Count Variable</p>
<p>Disseminated intravascular bleeding</p>	
<p>Preprocedure or therapeutic use. Consider threshold counts above but may not be achievable and individual case review required</p>	<p>Use preprocedure or therapeutic threshold as guide</p>
<p>Thrombotic thrombocytopenic purpura</p>	
<p>Platelet transfusion contraindicated unless <i>life-threatening bleeding</i></p>	<p>Count Variable</p>
<p>Immune thrombocytopenia</p>	
<p>(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</p>	<p>Use preprocedure or therapeutic threshold as guide</p>
<p>Abbreviations</p>	
<p>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)</p>	