

This guidance is based on the National Blood Transfusion Committee (NBTC)

Indication Codes for Transfusion (January 2020)

The indications for transfusion provided below are taken from national guidelines for the use of blood components in adults (see references). Amalgamation into this summary document aims to act as a prompt for clinicians to facilitate appropriate use and to enable robust documentation of indications. Each indication has been assigned a number, to permit reproducible coding, when requesting blood or for documentation purposes. Specific details regarding the patient's diagnosis and any relevant procedures to be undertaken should also be provided at request either on a written request form, electronic blood order or by telephone when the request is urgent. These are current guidelines and may change depending on new evidence.

Red cell concentrates

Dose: in the absence of active bleeding, use the minimum number of units required to achieve a target Hb. Assume an increment of 10g/L per unit for an average adult.

R1. Acute bleeding

Acute blood loss with haemodynamic instability. After normovolaemia has been achieved/ maintained, frequent measurement of Hb (including by near patient testing) should be used to guide the use of red cell transfusion – see suggested thresholds below

R2. Hb ≤ 70g/L stable patient

Acute anaemia. Consider an Hb threshold of 70g/L and a target Hb of 70-90g/L to guide red cell transfusion. There are different recommendations (based on weak evidence) from other organisations e.g. Association of Anaesthetists

R3. Hb ≤ 80g/L stable patient and acute coronary syndrome

Use an Hb threshold of 80g/L and a target Hb of 80-100g/L

R4. Chronic transfusion dependent anaemia

Transfuse to maintain an Hb which prevents symptoms. Suggest an Hb threshold of 80g/L initially and adjust as required. Haemoglobinopathy patients require individualised Hb thresholds depending on age and diagnosis

R5. Radiotherapy maintain Hb ≥100g/L

There is some evidence for maintaining an Hb of 100g/L in patients receiving radiotherapy for cervical, and possibly other tumours

R6. Exchange transfusion

Fresh frozen plasma (FFP)

Dose: 15-20ml/kg body weight, often equivalent to 4 units in adults.

F1. Major haemorrhage

In the trauma setting transfuse empirically in a 1:1 ratio with red cells. Other settings give FFP in at least a 1 unit:2 unit ratio with red cells until results from coagulation monitoring are available. Once bleeding is controlled, further FFP should be guided by abnormalities in PT and APTT (keep PT/APTT ratio of <1.5x mean normal), or by the use of viscoelastic haemostatic assays in a near-patient setting

F2. PT Ratio/INR >1.5 with bleeding

Clinically significant bleeding without major haemorrhage. FFP required if coagulopathy. Aim for a PT and APTT ratio of < 1.5, or local protocol range for near-patient viscoelastic assays

F3. PT Ratio/INR >1.5 and pre-procedure

Prophylactic use when coagulation results are abnormal e.g. disseminated intravascular coagulation and invasive procedure is planned

F4. Liver disease with PT Ratio/INR >2 and pre-procedure

FFP not usually required before invasive procedure if PT ratio/INR is <2 and if there is no significant risk of bleeding

F5. TTP/plasma exchange

F6. Replacement of single coagulation factor



Prothrombin complex concentrate

Dose should be determined by the situation and INR. Local guidelines should be followed.

PCC1. Emergency reversal of VKA for severe bleeding or head injury with suspected intracerebral haemorrhage.

PCC2. Emergency reversal of VKA pre emergency surgery

Cryoprecipitate

Dose: 2 pooled units, equivalent to 10 individual units, will increase fibrinogen in an average-sized adult.

Cryoprecipitate should be used with FFP wherever there is a requirement for volume, except in the rare setting of isolated deficiency of fibrinogen.

C1. Clinically significant bleeding and fibrinogen <1.5g/L (<2g/L in obstetric bleeding)

C2. Fibrinogen <1g/L and pre procedure, with a risk of bleeding

C3. Bleeding associated with thrombolytic therapy

C4. Inherited hypofibrinogenaemia, fibrinogen concentrate not available



Platelet concentrates

Dose: for prophylaxis, do not routinely transfuse more than 1 adult therapeutic dose. Prior to invasive procedure or to treat bleeding, consider the size of the patient, previous increments, and the target count.

Prophylactic platelet transfusion

P1. Plt <10 x 10⁹/L reversible bone marrow failure

Not indicated in chronic bone marrow failure if not on intensive treatment, and not bleeding

P2. Plt 10 – 20 x 10⁹/L sepsis/haemostatic abnormality or other additional risk factor for bleeding

Prior to invasive procedure or surgery

P3. To prevent bleeding associated with invasive procedures

- P3a Plt ≤20 x 10⁹/L - central venous line
- P3b Plt ≤40 x 10⁹/L - pre lumbar puncture/spinal anaesthesia
- P3c Plt ≤50 x 10⁹/L - pre-percutaneous liver biopsy/major surgery
- P3d Plt ≤80 x 10⁹/L - epidural anaesthesia
- P3e Plt ≤100 x 10⁹/L - pre critical site surgery e.g. CNS/Eye

Transfusion prior to bone marrow biopsy is not required

Therapeutic use to treat bleeding (WHO bleeding grade 2 or above)

P4a Plt <50 x 10⁹/L - Major haemorrhage

P4b Empirically in a Major Haemorrhage Pack / Protocol

P4c Plt <100 x 10⁹/L - Critical site bleeding e.g. CNS

P4d Plt <30 x 10⁹/L - Clinically significant bleeding

Specific clinical conditions

P5a DIC pre procedure or if bleeding

P5b Primary Immune thrombocytopenia (emergency treatment pre-procedure/severe bleeding)

Platelet dysfunction

P6a Consider if critical bleeding on anti-platelet medication

P6b Inherited platelet disorders directed by specialist in haemostasis



References

- Davis BA, Allard S, Qureshi A, et al. Guidelines on red cell transfusion in sickle cell disease Part II : indications for transfusion. Br J Haematol 2017;176: 192-209.
- Estcourt LJ, Birchall J, Allard S, et al. Guidelines for the use of platelet transfusions. Br J Haematol 2017;176:365-394.
- Green L, Bolton-Maggs P, Beattie C, et al. British Society of Haematology Guidelines on the spectrum of fresh frozen plasma and cryoprecipitate products: their handling and use in various patient groups in the absence of major bleeding. Br J Haematol 2018;181:54-67
- Hunt BJ, Allard S, Keeling D, et al. A practical guideline for the haematological management of major haemorrhage. Br J Haematol 2015;170:788-803.
- National Institute for Health and Care Excellence (NICE). NICE guidelines [NG24] Blood transfusion. <https://www.nice.org.uk/guidance/ng24> (2015, accessed March 2019).

- Oakland K, Chadwick G, East JE, et al. Diagnosis and management of acute lower gastrointestinal bleeding: guidelines from the British Society of Gastroenterology Gut 2019;68:776-789.
- RCOG. Blood transfusion in obstetrics. (Green-top 47) 2015. <https://www.rcog.org.uk/en/guidelines-research-services/guidelines/gtg47/> (Accessed March 2019)
- Retter A, Wyncoll D, Pearse R, et al. Guidelines on the management of anaemia and red cell transfusion in adult critically ill patients. Br J Haematol 2013;160:445-64.
- Tripathi D, Stanley AJ, Hayes PC, et al. UK guidelines on the management of variceal haemorrhage in cirrhotic patients. Gut 2015;64:1680-1704.