INDICATION CODES FOR TRANSFUSION – AN AUDIT TOOL

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. Consider the size of the patient; assume an increment of 10g/L per unit for an average 70 kg 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. Use an Hb threshold of 70g/L and a target Hb of 70-90g/L to guide red cell transfusion. Follow local/specific protocols for indications such as post cardiac surgery, traumatic brain injury, acute cerebral ischaemia.

**R3 Hb ≤ 80g/L if cardiovascular disease**
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 ≥ 110g/L**
There is limited evidence for maintaining an Hb of 110g/L in patients receiving radiotherapy for cervical and possibly other tumours.

**R6 Exchange transfusion**

**Fresh frozen plasma**
Dose - 15 ml/kg body weight, often equivalent to 4 units in adults.
**F1 Major haemorrhage**
Early infusion of FFP is recommended in a ratio of 1 unit FFP:1 unit red cells for trauma and at least 1 unit FFP: 2 units red cells in other major haemorrhage settings. Once bleeding is under control, FFP use should be guided by timely tests for coagulation as indicated below.

**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 $\leq 1.5$.

**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 with risk of clinically significant bleeding.

**F4 Liver disease with PT Ratio/INR > 2 and pre-procedure**
FFP should not be routinely administered to non-bleeding patients or before invasive procedures when the PT ratio/INR is $\leq 2$.

**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 by approximately 1g/L. Cryoprecipitate is usually used with FFP unless there is an 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**

**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 10^9/L reversible bone marrow failure**

**Not indicated in chronic bone marrow failure**

**P2 Plt 10 - 20 x 10^9/L sepsis / haemostatic abnormality**

*Prior to invasive procedure or surgery*

**P3** To prevent bleeding associated with invasive procedures.
Platelets should be transfused if:

- **P3a** Plt <20 x 10^9/L central venous line
- **P3b** Plt <40 x 10^9/L pre lumbar puncture/spinal anaesthesia
- **P3c** Plt <50 x 10^9/L pre liver biopsy / major surgery
- **P3d** Plt <80 x 10^9/L epidural anaesthesia
- **P3e** Plt <100 x 10^9/L pre critical site surgery eg CNS
- Transfusion prior to bone marrow biopsy is not required.

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

- **P4a** Major haemorrhage Plt <50 x 10^9/L
- **P4b** Critical site bleeding eg CNS / traumatic brain injury Plt < 100 x 10^9/L
- **P4c** Clinically significant bleeding Plt < 30 x 10^9/L

**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**


British Society of Gastroenterology, Clinical Services, Care Bundles. British Society of Gastroenterology & British Association for the study of the Liver Decompensated Cirrhosis Care Bundle – First 24 Hours. www.bsg.org.uk


Janet Birchall
Mike Murphy
Jonathan Wallis
Kate Pendry

June 2016