

# Indications for the use of Blood Components in Adults

This guidance is based on the NBTC Indication Codes for Transfusion (June 2016).

## Red cell concentrates

Dose – if no bleeding and anaemia reversible, use the minimum number of units to achieve a target Hb. Assume an increment of 10g/L per unit for a 70kg adult.

- **R1 Acute Bleeding** Once normovolaemia achieved, frequent measurement of Hb (including by near patient testing) should be used – see suggested thresholds below.
- **R2 Hb  $\leq 70\text{g/L}$**  if stable acute anaemia. Use a target Hb of 70-90g/L. Follow local protocols for post cardiac surgery, traumatic brain injury, acute cerebral ischaemia.
- **R3 Hb  $\leq 80\text{g/L}$  if cardiovascular disease** Use a target Hb of 80-100g/L.
- **R4 Chronic transfusion dependent anaemia** Maintain an Hb which prevents symptoms. Suggest an initial threshold of 80g/L then adjust as required. Haemoglobinopathy patients require individualised Hb thresholds.
- **R5 Radiotherapy** Limited data for maintaining Hb of 110g/L.
- **R6 Exchange transfusion.**

## Fresh frozen plasma

Dose – 15ml/kg body weight, often equivalent to 4 units.

- **F1 Major haemorrhage** Early use in trauma – 1 unit FFP: 1 unit red cells. Other settings at least 1 unit FFP: 2 units red cells. Once bleeding controlled use thresholds below.
- **F2 PT Ratio/INR  $>1.5$  with bleeding** without major haemorrhage. Keep PT/APTT ratio of  $<1.5$ .
- **F3 PT Ratio/INR  $>1.5$  and pre-procedure** e.g. disseminated intravascular coagulation (DIC) with risk of significant bleeding.
- **F4 Liver disease with PT Ratio/INR  $>2$  and pre-procedure** Not usually required if no bleeding or before invasive procedure if PT ratio/INR is  $<2$ .
- **F5 TTP/plasma exchange.**
- **F6 Replacement of single coagulation factor.**

## Prothrombin complex concentrate

Dose determined by situation and INR. Follow local guidelines.

- **PCC1 Emergency reversal of VKA for severe bleeding** or head injury with suspected intracerebral haemorrhage.
- **PCC2 Emergency reversal of VKA pre emergency surgery.**

### Reference:

National Blood Transfusion Committee Indication Codes

<http://www.transfusionguidelines.org.uk/uk-transfusion-committees/national-blood-transfusion-committee/responses-and-recommendations>

## Cryoprecipitate

Dose – 2 pooled units will increase fibrinogen by approximately 1g/L. Cryoprecipitate is usually used with FFP unless there is an isolated fibrinogen deficiency.

- **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, 1 adult therapeutic dose. Prior to invasive procedure/to treat bleeding, consider patient size, previous increments and target count.

### *Prophylactic platelet transfusion*

- **P1 Plt <10 x 10<sup>9</sup>/L reversible bone marrow failure. Not indicated in chronic bone marrow failure.**
- **P2 Plt 10 – 20 x 10<sup>9</sup>/L sepsis/haemostatic abnormality.**

### *Prior to invasive procedure or surgery if:*

- **P3a Plt <20 x 10<sup>9</sup>/L central venous line.**
- **P3b Plt <40x10<sup>9</sup>/L pre lumbar puncture/spinal anaesthesia.**
- **P3c Plt <50x10<sup>9</sup>/L pre liver biopsy/major surgery.**
- **P3d Plt <80x10<sup>9</sup>/L epidural anaesthesia.**
- **P3e Plt <100x10<sup>9</sup>/L pre critical site surgery e.g. CNS.**
- **Transfusion prior to bone marrow biopsy not required.**

### *Therapeutic use to treat bleeding (WHO bleeding grade ≥2)*

- **P4a Major haemorrhage Plt <50 x 10<sup>9</sup>/L.**
- **P4b Critical site bleeding e.g. CNS Plt <100 x 10<sup>9</sup>/L.**
- **P4c Clinically significant bleeding Plt <30 x 10<sup>9</sup>/L.**

### *Specific clinical conditions*

- **P5a DIC pre procedure or if bleeding.**
- **P5b Primary immune thrombocytopenia (emergency pre-procedure/severe bleeding).**

### *Platelet dysfunction*

- **P6a Consider if critical bleeding on anti-platelet agent.**
- **P6b Inherited platelet disorders directed by haemostasis specialist.**

Further information will be available on hospital intranet sites or from the blood transfusion laboratory.

Further supplies of this bookmark can be ordered by accessing <https://hospital.nhsbtleaflets.co.uk>