NHS
Blood and Transplant

FACTSHEET

Standard Cryoprecipitate and Methylene Blue treated Cryoprecipitate

Information for Healthcare Professionals

The indications for transfusing cryoprecipitate are limited and specific.

Please transfuse appropriately.

Standard Cryoprecipitate

Cryoprecipitate contains concentrated Factor VIII:C, von Willebrand factor, fibrinogen, Factor XIII, and fibronectin and is produced by further processing of Fresh Frozen Plasma (FFP). Clinically it is used to replace fibrinogen.

As with FFP, the plasma from which the cryoprecipitate was produced has been leucodepleted and was obtained from a male donor to reduce the risk of transfusion-related acute lung injury (TRALI). Cryoprecipitate should be stored at a core temperature of -25°C or below for up to 36 months.

Clinical indications for use of cryoprecipitate in adults*

- **Clinically significant bleeding and a fibrinogen level <1.5g/L (<2g/L in obstetric bleeding)**
- **Fibrinogen level is <1g/L and pre-procedure**
- **Bleeding associated with thrombolytic therapy**
- **Inherited hypofibrinogenaemia where fibrinogen concentrate is not available.**

(*National Blood Transfusion Committee Indication Codes for Transfusion, 2016.)

Presentation and dosage of cryoprecipitate

Cryoprecipitate is available as a single unit, or as a pooled product made up of five single units. Pooled units are more commonly used to treat adult patients.

The adult therapeutic dose is two pooled units, or one single unit per 5-10kg body weight, dependant on the degree of fibrinogen deficiency. Paediatric dosing is 5-10mL/kg.

Methylene Blue treated Cryoprecipitate (MB Cryoprecipitate)

MB Cryoprecipitate is made from non-UK sourced plasma and should be used for those born after 1st January 1996.

MB Cryoprecipitate is produced from donations from previously tested donors, either males, or females who have been screened for any Human Leucocyte Antigens in the last 2 years; they are leucodepleted and treated with methylene blue (MB) followed by exposure to visible light to inactivate viral pathogens. Any residual MB is then removed.

MB Cryoprecipitate is available as a single unit, or as a pooled product made up from six single units.

If MB Cryoprecipitate is not available, patients should be treated with standard Cryoprecipitate, when indicated, in an emergency.

Practical instructions for the use of Cryoprecipitate

Once thawed, Cryoprecipitate must not be refrozen and should be used immediately. If delay is unavoidable the component should be stored at ambient temperature (i.e. **not** in a fridge), to prevent re-precipitation, and must be transfused within four hours. Transfuse using a standard blood giving set with a 170-200 micron filter. The typical infusion rate is 10-20mL/kg/hr (30-60 min per five pool unit).

Compatibility

ABO group identical Cryoprecipitate should be given whenever possible; if not possible Cryoprecipitate of a different ABO group may be acceptable (this must be discussed with the hospital transfusion laboratory staff or haematologist).

ABO compatibility for plasma components is different to that of red cells and **Group O Cryoprecipitate MUST only be given to group O recipients**.

Standard Cryo selection for ABO group

Recipient Group	O	A	B	AB
1st Choice	O	A	B	AB**
2nd Choice	A	B*	A*	A*
3rd Choice	B	–	–	B*

**Pooled Group AB Cryo. is in limited supply and only available on a named patient basis.

*Suitable for use in adults if negative for high titre anti-A/anti-B (labelled HT-)

MB Cryoprecipitate selection for ABO group

Recipient Group	O	A	B	AB
1st Choice	O	A	B	AB
2nd Choice	A	AB	AB	A*
3rd Choice	B	B*	A*	B*

*MB Cryoprecipitate is not tested for HT antibodies. Group compatible plasma should be used wherever possible. Non-compatible groups should only be used in emergencies when compatible groups are not available.

Group AB cryoprecipitate is haemolysin free and suitable for patients of any ABO group but is in limited supply.

D group

Cryoprecipitate **does not need to be matched for D group**. D positive plasma components may be given to D negative recipients without the need for anti-D Ig prophylaxis. The EU Blood Directive currently requires that the D group is stated on the label.

If you are unsure about the compatibility of Cryoprecipitate for your patient always check with your hospital transfusion laboratory staff before transfusing.

Specific requirements

Cryoprecipitate has no cellular content and therefore **does not need** to be irradiated or selected as Cytomegalovirus (CMV) sero-negative.

The use of other frozen components produced is covered in a separate factsheet:

- Standard Fresh Frozen Plasma (FFP), Methylene Blue treated FFP, and Solvent Detergent treated FFP.

References:

Green, L *et al* on behalf of British Society of Haematology (2018) *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.* Available at: https://www.b-s-h.org.uk/guidelines/guidelines/spectrum-of-fresh-frozen-plasma-and-cryoprecipitate-products/

Hunt, B *et al* on behalf of British Committee for Standards in Haematology Transfusion Task Force (2015) *A practical guideline for the haematological management of major haemorrhage.* Available at: https://b-s-h.org.uk/guidelines/guidelines/haematological-management-of-major-haemorrhage/

Joint United Kingdom (UK) Blood Transfusion and Tissue Transplantation Services *Professional Advisory Committee Guidelines for blood transfusion services* (red Book). Available at: https://www.transfusionguidelines.org/red-book/chapter-7-specifications-for-blood-components/7-15-fresh-frozen-plasma-leucocyte-depleted

National Blood Transfusion Committee (2016) *Indication Codes for Transfusion – An audit tool.* Available at: http://www.transfusionguidelines.org.uk/

New, H *et al* on behalf of British Committee for Standards in Haematology (2016) *Guidelines on transfusion for fetuses, neonates and older children.* Available at: https://b-s-h.org.uk/guidelines/guidelines/transfusion-for-fetuses-neonates-and-older-children/

NHS Blood and Transplant (2016) *Portfolio of components and guidance for their clinical use* (specification SPN223/8). Available at: http://hospital.blood.co.uk/products/

Norfolk D. (Ed) (2013) *Handbook of Transfusion Medicine* 5th Edition, The Stationery Office

Robinson, S. *et al* on behalf of the British Society for Haematology (BSH) (2017) Administration of Blood Components. Available at: https://www.b-s-h.org.uk/guidelines/guidelines/administration-of-blood-components/

Further supplies of this factsheet can be ordered by accessing **https://hospital.nhsbtleaflets.co.uk**

For further information please consult your Hospital Blood Transfusion Policy or contact a member of your Hospital Transfusion Team.

NHS Blood and Transplant

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We rely on thousands of members of the public who voluntarily donate their blood, organs, tissues, and stem cells. Their generosity means each year we're able to supply around 2 million units of blood to hospitals in England and 7,500 organ and tissue donations within the UK, which save or improve thousands more people's lives.

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