SOUTHEND HOSPITAL

GUIDELINES

INDICATION FOR THE USE OF FRESH FROZEN PLASMA (FFP), AND CRYOPRECIPITATE

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And

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INDICATIONS FOR THE USE OF FRESH FROZEN PLASMA AND CRYOPRECIPITATE

SUMMARY

FRESH FROZEN PLASMA
Dose 12-15ml/kg body weight, equivalent to 3-4 units per adult

F1 Replacement of single coagulation factor deficiencies where there is no specific factor concentrate is available.

F2 Immediate reversal of warfarin effect, in the presence of life – threatening bleeding should a prothrombin complex concentrate not be available. NOTE: A prothrombin complex concentrate (Beriplex). should be used in preference to fresh frozen plasma. Please refer to CG 169.

F3 Acute disseminated intravascular coagulation (DIC) in the presence of bleeding and abnormal coagulation results.

F4 Thrombotic thrombocytopaenia purpura (TTP), usually in conjunction with plasma exchange.

F5 Massive transfusion, coagulation factor deficiency may occur after loss of 1.5 blood volume: aim for Pt and APTT ratio <1.5.

F6 Liver disease, to correct bleeding or as prophylaxis prior to surgery when the PT is >1.5 the control value.( >20 secs)

CRYOPRECIPITATE
Note: as of 2006 cryoprecipitate is now supplied as a pooled product (one pack is a 5-unit pool)

Dose: typical adult dose is two 5-unit pools( equivalent to the historical dose of 10 single donor units)

C1 Hypofibrinogenaemia (<1g/l) secondary to massive transfusion.

C2 Inherited hypofibrinogenaemia. Recombinant fibrinogen can be used on a named basis

C3 DIC where there is bleeding and a fibrinogen level <1.0g/l

C4 Advanced liver disease to correct bleeding or prophylaxis prior to surgery when fibrinogen <1g/l.

C5 Renal failure or liver failure associated with abnormal bleeding where DDAVP is contraindicated or ineffective.

C6 Bleeding associated with thrombolytic therapy causing hypofibrinogenanaemia
INTRODUCTION

Appropriate use of blood and blood products is becoming an increasingly important clinical governance and public health issue. These guidelines are intended to help the clinician to decide when it is appropriate to transfuse one of those blood components and to minimise the risk of donor exposure.

These guidelines must not replace clinical assessment of the patient.

Please contact the Blood Transfusion Laboratory directly to order any of these products.

For audit purposes each indication has been assigned a reference number.

Allow 20 minutes for thawing (at 37°C). Thawed FFP is best used immediately but can be stored in the blood bank fridge at 4°C and infused within 24 hours. If FFP is removed from storage and not used it must be returned to the blood bank fridge within 30 minutes. Thawed cryoprecipitate is stored at room temperature and must be infused within 4 hours of thawing.

For further advice please contact Haem.SpR or Consultant Haematologist.

Associated policies and guidelines available on Staff net

- BT -11 Policy for the Administration of Blood and Blood Components
- CG 169 Guideline for the Use of Beriplex
- CG-051 Guidelines on the use of ORhD Negative Red Cells
- CG-260 Guidelines for the Management of Adult Major Haemorrhage
INDICATIONS FOR THE USE OF FRESH FROZEN PLASMA (FFP)

The indications for transfusing FFP and cryoprecipitate are very limited. Clinicians should be aware that the risks of transmitting infection are similar to those of other blood components. Also the risks of allergic reactions and anaphylactic shock, transfusion related acute lung injury, and haemolysis should be borne in mind.

The response to FFP is unpredictable. Patients likely to receive large volumes of FFP – consider Hepatitis A and B vaccination.

Dose 12-15ml/kg body weight (BW), equivalent to 3-4 units for an adult

Typical infusion rate 10-20ml/kg/hr (approximately 30 minutes per unit)

1 unit FFP = (250-300ml).

Solvent detergent virally inactivated FFP = 200ml/pack

Methylene blue virally inactivated neonatal FFP = 50-75ml/pack. Please refer to neonatal and children’s guidelines

The RhD status of the FFP is unimportant and RhD positive FFP can be safely given to Rh negative recipients – even young women. The Blood Safety and Quality Regulations still requires FFP to be labelled according to the RhD group of the donor, even though this is not a requirement of the Council of Europe.

F.1 Replacement of single coagulation factors, where a specific factor concentrate is unavailable (use virally inactivated FFP)

F.2 Immediate reversal of Warfarin effect in the presence of life-threatening bleeding. NOTE: A prothrombin complex concentrate (Beriplex) should be used in preference to fresh frozen plasma. Please refer to CG 169.

FFP should never be used to reverse the effect of Warfarin in the absence of bleeding. However it may be necessary to reverse warfarin in patients needing urgent surgery or when the INR is very high, particularly in elderly patients.
**F.3** Acute disseminated intravascular coagulation (DIC) only in the presence of bleeding and abnormal coagulation results. There is no evidence that prophylactic replacement regimes prevent or reduce transfusion requirements.

**F.4** Thrombotic thrombocytopenic purpura (TTP) usually in conjunction with plasma exchange. Virally inactivated (FFP) is preferable. Daily plasma exchange should continue for a minimum of 2 days after remission.

**F.5** Massive transfusion – FFP should never be used as a simple volume replacement. Coagulation factor deficiency can be expected after rapid replacement of one blood volume within 6 hours. FFP can be used at initial dose of 15ml/kg BW aiming for prothrombin time (PT) and APTT < 1.5 of control. Coagulation test should be monitored if bleeding continues and may be necessary to repeat FFP transfusion. If the major source of bleeding has been controlled and there is no evidence of microvascular bleeding, there is no need to give blood components.

**Note:** Blood volume estimate: adult 70 ml/kg

**F.6** Liver disease to correct bleeding or as prophylaxis prior to surgery when the PT is > 1.5 of the control. For liver biopsy PT should be within 4 seconds of the control.
INDICATIONS FOR THE USE OF CRYOPRECIPITATE

Useful only if fibrinogen <1g/l.

Dose: A typical adult dose is two five-unit pools (equivalent to the historical dose of 10 single donor units) containing 3-6g fibrinogen in a volume of 200 to 500 ml. One such treatment administered to an adult would typically raise the plasma fibrinogen to by about 1g/l. Repeat based on fibrinogen level.

Typical infusion rate 10-20ml/kg/hr (or 30 to 60 minutes per 5 unit pool)

C1. Hypofibrinogenaeemia (fibrinogen level < 1.0g/l) secondary to massive transfusion. Early use of FFP may avoid the need for cryoprecipitate. Repeat fibrinogen level after the initial dose.

C2. Inherited hypofibrinogenaeemia. This is an uncommon bleeding disorder. (Recombinant fibrinogen can be used on a named basis)

C3. Acute disseminated intravascular coagulation (DIC) where there is bleeding and a fibrinogen level < 1g/l. This can be used in combination with FFP and platelets if indicated.

Note: Treating the underlying cause is the cornerstone of managing DIC.

C4. Advanced liver disease to correct bleeding or as prophylaxis before surgery when fibrinogen level is < 1.0g/l.

C5. Renal failure or liver failure associated with abnormal bleeding where DDAVP is contra-indicated or ineffective and fibrinogen level < 1g/l.

References


2. Fourth Edition, Handbook of Transfusion Medicine, Blood Transfusion Services of the United Kingdom 2007 (Editor: DBL McLelland)

3. Amendments and corrections to the “Guidelines for the use of fresh frozen Plasma, cryoprecipitate and cryosupernatant
Frank Boulton 29th November 2005 Chair BCSH Transfusion Task Force.