

Prescribing Fresh Frozen Plasma

Indications

Transfusion of fresh frozen plasma (FFP) is inappropriate in many settings.

Evidence-based indications for FFP transfusion include:

- replacement of single coagulation factor or protein deficiency if no factor specific concentrate is available:
 - severe hereditary protein S deficiency¹
 - Factor V deficiency
- prevention of dilutional coagulopathy in the setting of massive transfusion (refer to your institutional massive transfusion protocol (MTP))
- disseminated intravascular coagulation (DIC)
- plasma exchange, for example, in thrombotic thrombocytopenic purpura (TTP)
- reversal of warfarin anticoagulation² for:
 - clinically significant bleeding and/or life-threatening critical organ bleeding **when Prothrombinex-VF is not available**
 - life-threatening critical organ bleeding (including intracranial haemorrhage) [150–300 mLs] **in addition to Prothrombinex-VF.**

FFP may have a role in treating coagulopathy with active bleeding in children:

- undergoing surgery^{1,3} or prior to invasive procedures with risk of significant bleeding¹
- critically ill patients,³ and
- preterm and low birthweight infants.³

Dose

In most cases the dose will be 15 mL/kg. Consider:

- 15–20 mL/kg for adults, and
- 10–20 mL/kg for paediatric patients < 30 kg.

For patients on warfarin, refer to the *Warfarin reversal* card for indications and dosing of FFP.

Warning: Consider lower dose range in patients at risk of fluid overload e.g. neonates and congestive cardiac failure.

Outcomes

When prescribing FFP, evaluate clinical outcomes to determine success e.g. cessation of bleeding.

International normalised ratio (INR) changes may not correlate with clinical effect of FFP transfusion:⁴

- the effect of plasma transfusion on INR is transient
- for the same volume of transfused plasma, a greater reduction in INR is observed at a higher initial INR, and
- the effect of plasma transfusion on INR reduction diminishes as more plasma is transfused.

References

1. New HV, Berryman J, Bolton-Maggs PHB, Cantwell C, Chalmers EA, Davies T, Gottstein R et al. on behalf of the British Committee for Standards in Haematology. Guidelines on transfusion for foetuses, neonates and older children. British Society for Haematology 2016. Available at: <https://b-s-h.org.uk/guidelines/guidelines/transfusion-for-fetuses-neonates-and-older-children/>
2. Tran HA, Chunilal SD, Harper PL, Tran H, Wood EM, Gallus AS. An update of consensus guidelines for warfarin reversal. MJA 2013;198(4):198–199. Available at: <https://www.mja.com.au/journal/2013/198/4/update-consensus-guidelines-warfarin-reversal>
3. National Blood Authority. Patient Blood Management Guidelines: Module 6 – Neonatal and Paediatrics. 2016.
4. Bryan et al. Plasma Transfusion Demystified: A Review of the Key Factors Influencing Response to Plasma Transfusion. Lab Medicine 2017;48:108–112.