

FFP

Pre-Procedural Dosing and Administration Guidelines:

Dosage:

- Bleeding in a coagulation factor deficient patient: **10-15 ml/kg**

Prophylactic pre-procedural dosing: Suggested transfusion guidelines

INR	Action
INR 1.6 to 2.0	<ul style="list-style-type: none">● Transfuse 5 ml/kg FFP, if clinically indicated
INR 2.1 to 4.0	<ul style="list-style-type: none">● Transfuse 10 ml/kg,● (Round to nearest unit)
INR 4.0 to 8.0	<ul style="list-style-type: none">● Transfuse 15 ml/kg, double check final volume!**● (Round to nearest unit)
INR above 8.0 Or	<ul style="list-style-type: none">● Consider PCC (K-centra)● Begin FFP administration (15 ml/kg)● Give Vit K
FFP volume too high (TACO risk)	<ul style="list-style-type: none">● Monitor PT, PTT and INR frequently● Contact hematology or blood bank for consult if needed

Guidelines for Performing Procedure after FFP Administration for Initial INR

Initial INR	Guideline after FFP administration:
1.6 to 2.0	Can go directly to procedure without repeat INR result
2.1 to 4.0	Can go directly to procedure without repeat INR result
4.1 to 8.0	Wait for repeat INR result (draw 15 minutes after transfusion and rush order) <ul style="list-style-type: none">● INR < 1.6: Proceed directly with procedure● INR 1.6 to 2.0: Administer 5 ml/kg of FFP and proceed directly to procedure● INR 2.1 to 4.0: Administer 10 ml/kg of FFP and recheck INR

*** FFP and Prothrombin Complex Concentrate (PCC, K-centra) should not be given together due to thrombotic risk.

FFP Transfusions and Indications:

Indications:

Treatment of bleeding patients or patients undergoing invasive procedures with *multiple coagulation factor deficiencies*, including those associated with warfarin dosing, liver failure, massive blood loss and volume resuscitation, or DIC.

Treatment of specific coagulation / anticoagulant factor deficiencies for which factor concentrates are not available (Factors II, V, X, XI).

Common misunderstandings:

- PT and INR measurements:
 - *HIGHLY* dependent on Factor VII levels
 - Factor VII has a half-life of **2-6 hours**

- Vitamin K and FFP should be administered together to urgently reverse anticoagulation
- Vitamin K **only** for non-emergent reversal
- **FFP only “lasts” a few hours**

Myths and Misconceptions:

- *Plasma transfusion cannot be expected to “normalize” the INR to 1.0.*
 - A 2006 study in which FFP was transfused to patients with an **INR of 1.1 – 1.9** showed that:
 - <1% of patients had complete INR correction
 - **Only 15%** corrected halfway
 - (Abdel-Wahab et al. *Transfusion* 2006)

Key Points:
<ul style="list-style-type: none">● Use Vitamin K, unless urgent reversal is needed (then use FFP)● Never “chase” an INR!● The INR is only good for a few hours.● FFP is only good for a few hours.

Nursing Administration

1. Plasma infusion should be timed to finish *within one hour* of planned procedure
2. Give pre-medications as appropriate for the individual patient
3. Administer each unit FFP over **15 to 20 minutes**, maximum 15 minutes between units, if patient can tolerate volume load
4. Send PT, INR, PTT **within 15 minutes** of completion of infusion