**VUMC Blood Bank Website**

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**Cryoprecipitate**

**Introduction:**
Cryoprecipitate is obtained by slowly thawing Fresh Frozen Plasma (FFP) obtained from whole blood donations. Usually, each unit of cryoprecipitate has a volume of approximately 10-15 mL.

According to standards set by the AABB, each unit of cryoprecipitate must contain at least 150 mg of fibrinogen. Cryoprecipitate also contains at least 80 IU of Factor VIII and appreciable amounts of von Willebrand Factor (vWF) and Factor XIII. Cryoprecipitate does not contain appreciable amounts of the other clotting factors, which are found in FFP in a concentration of approximately 1 U / mL.

**Indications:**
The most common indication for cryoprecipitate transfusion is hypofibrinogenemia, usually in the setting of DIC or major surgery but occasionally due to hereditary hypofibrinogenemia. Less commonly, cryoprecipitate has been used to provide factor replacement in Factor XIII deficiency. Cryoprecipitate is not commonly used for treatment of hemophilia A (Factor VIII deficiency) or von Willebrand’s disease. Vanderbilt discourages the use of cryoprecipitate as a post-surgical fibrin sealant.

**Dosage:**
Prior to transfusion of cryoprecipitate for hypofibrinogenemia, the patient’s current fibrinogen level as well as a goal fibrinogen level should be obtained. Unless there is a medical indication, we recommend 100 mg/dL as the therapeutic goal for fibrinogen. To calculate the dose of cryoprecipitate in adult-sized patients, we recommend the following formula:

\[
\text{Number of Units} = \left( \frac{\text{Required Increase in Fibrinogen (mg/dL)} / 100}{\text{Plasma Volume(mL)}} \right) / 150
\]

Consider an example of an adult patient with a fibrinogen of 60 mg/dL and a fibrinogen goal of 100 mg/dL. Assuming that the patient has a plasma volume of 3000 mL, the correct number of units of cryoprecipitate to transfuse is:

\[
((100-60)/100)*3000)/150 = 8 \text{ units of cryoprecipitate.}
\]

*Remember that blood volume is normally approximated to be Weight(kg)*70mL/kg but plasma volume is Blood Volume * (1-hematocrit).

In neonates, a single dose of cryoprecipitate will almost always be sufficient for treatment of hypofibrinogenemia.

Orders for cryoprecipitate that deviate from this algorithm - as well as orders for cryoprecipitate for patients without a recent fibrinogen level document in Starpanel - are flagged for review by the blood bank resident and/or the medical director of the blood bank prior to release of product.
Please see our recommended transfusion rate chart for suggestions in non-emergency situations.

**Special Information**
Unlike RBCs, platelets, and FFP, once cryoprecipitate is thawed, it cannot be re-stocked (re-frozen) by the blood bank. Please do not order this product in anticipation of returning unused portions. It takes approximately 30-45 minutes to thaw and pool cryoprecipitate for transfusion.