

VUMC Blood Bank Website

Products Page

Platelets

The VUMC blood bank stocks apheresis platelets. One unit of apheresis platelets usually contains 3.0×10^{11} platelets and is a therapeutic equivalent to 4 to 6 units of pooled platelets (old terminology "six pack").

All platelet products at VUMC are leukocyte reduced (LR), however, despite the 99.9% reduction in leukocytes in LR products, there remains $<5.0 \times 10^6$ leukocytes per unit.

Compatibility testing is not necessary in routine platelet transfusion(s).

The VUMC blood bank will make every effort to provide ABO compatible platelet transfusions available for all patients, however, the short shelf-life (5 days) of platelets may result in an ABO/Rh incompatible platelet transfusion. To reduce the potential risk for ABO-incompatible platelet transfusion passively mediated hemolytic transfusion reactions, the VUMC blood bank titers the donor plasma of select units in an effort to restrict "high-titer" apheresis platelet products to type-specific recipients. Apheresis platelets are suspended in donor plasma, which can vary between 100-500 mL. ACD-A is the anticoagulant solution currently used for the collection and preservation of apheresis platelets.

Mechanism of Action

Platelets are essential for normal hemostasis. Complex reactions occur between platelets, vWF, collagen in the walls of disturbed vasculature, phospholipids, and soluble coagulation factors, including thrombin. These changes induce platelet adherence to vessel walls and platelet activation, which leads to platelet aggregation and formation of a primary hemostatic plug. The therapeutic goal of platelet transfusion is to provide adequate numbers of normally functioning platelets for the prevention or cessation of bleeding. The lifespan of a transfused platelet is ~5 days.

Indications

Platelet transfusions may be given to patients with thrombocytopenia, dysfunctional platelet disorders, active platelet-related bleeding, or serious risk of bleeding (ie, prophylactic use).

Prophylactic platelet transfusion may **not** be of therapeutic benefit when thrombocytopenia is related to destruction of circulating platelets secondary to autoimmune disorders [eg, immune thrombocytopenic purpura (ITP)]; however, when these patients bleed, platelet therapy is often useful. Consult hematology for further management recommendations for ITP.

Contraindications

Do not use this component if bleeding is unrelated to decreased numbers of, or abnormally functioning, platelets.

Platelet hemostatic function/dysfunction from aspirin and/or clopidogrel (Plavix) can be assessed by the VUMC laboratory. The VerifyNow test requires a special collection kit, please contact the VUMC laboratory at (615)875-5633 (located at TVC 4606).



Document created by Garrett Booth, M.D., M.S.