Air Medical Physician Association

Out-Of-Hospital Blood Product Administration Considerations

Position Statement of the Air Medical Physician Association
Approved by the AMPA Board of Trustees, April 7, 2018

BACKGROUND

Numerous studies have demonstrated the benefit to patient survival of prehospital blood product administration.[1-9] Decision to administer blood products in the field should be program specific considering all variable in transport program's service and local blood bank. To be safely and effectively implemented, programs must develop protocols and procedures specific to the implementation for storage and administration of the blood products. The most appropriate blood product will vary with the indication for transfusion.[1-8] Paramount to a protocol of blood product transfusion are protocols related to hemorrhage control.

PROTOCOL OF BLOOD PRODUCT ADMINISTRATION

Air medical programs must develop protocols for blood product administration which include:

1. Indications for blood product administration for medical and trauma patients
2. Contraindications to blood product administration
3. Procedure for blood product administration
4. Amount of blood product to be transfused and endpoints of blood product resuscitation
5. Documentation requirements related to blood product administration
6. Potential transfusions reactions and treatments related to these reactions (hemolytic reactions, circulatory overload, transfusion related acute lung injury)
7. Communication with receiving center of prehospital blood product administration

Air medical programs must develop policies related to blood product storage and transport to include:

1. Insulated storage method
2. Appropriate storage labeling
3. Initial validation of cooler's ability to maintain required temperature
4. Yearly validation of storage cooler ability to maintain temperature
5. Temperature monitoring
   a. Recommended continuous wireless electronic monitoring with

measurement every minute with connection to monitoring station
   b. Minimum monitoring requirement of every 4 hours
6. Temperature control
   a. $\leq 6^{o}$ C (42^{o}F) refrigeration
   b. $\leq 10^{o}$C (50^{o}F) during transport
   c. Method for discarding units if above temperature control
7. Documentation of compliance with blood product storage temperature control

ADDITIONAL CONSIDERATIONS

Air Medical programs must develop a Quality Assurance Program for Blood Product Administration

1. Crewmember education should be designed for individual program's blood products
2. 100% of cases in which a blood product is administered should be reviewed for appropriateness of administration

Air medical programs must develop protocol(s) for the type of blood product to be carried with consideration to:

1. All blood products
   a. Mechanism for exchanging blood product units with the issuing blood bank when nearing expiration date
2. Packed red blood cells (PRBC)
   a. Preferred O-negative
   b. Method of notifying receiving center if female of child-bearing age receives O-positive transfusion
   c. Shelf-life: 42 days from date of donation
3. Fresh frozen plasma (FFP)
   a. Shelf-life: one year while frozen
   b. Shelf-life: five days once thawed
   c. One-time thaw permitted
4. Liquid plasma
   a. Shelf-life: 28 days (never frozen)
   b. Slightly fewer clotting factors with increasing shelf-time
5. Whole blood
   a. Shelf-life of 10-14 days
   b. Limited by platelet activity
6. Platelets
   a. Shelf-life: 3-5 days from date of collection

Note: Individual air medical programs shelf-life times may vary slightly per local blood product provider policies. Programs must work with their product provider to define the local shelf-life permitted for their products.

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ACKNOWLEDGEMENTS

This position paper was approved by the Position Paper Task Force of the Air Medical Physician Association (AMPA) and authored by Doug Swanson, MD, FACEP, FAEMS and Frank Guyette, MD, MPH.