



**GULF COAST
VETERINARY
SPECIALISTS**

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**SPECIAL
POINTS OF
INTEREST:**

- Transfusions are now considered an essential treatment for many critically ill dogs and cats
- Blood typing and cross-matching are routinely done, if the patient is stable, to prevent any transfusion reactions
- There are many factors that go into deciding how rapidly blood products are administered, but it is usually related to how quickly the blood or red cells were lost

Transfusions in Veterinary Medicine



A unit of blood is prepared for administration



The on-site donor colony at GCVS currently houses 5 pampered and pre-screened donor cats



One of our ICU patients receives a unit of blood

Dear Colleague,

Just like humans, here at TGCVS our dog and cat patients have the necessity for blood product transfusions on an almost daily basis. Whether whole blood, red blood cells or plasma transfusions are needed, we have all of these products available for immediate use in our intensive care unit. Some products are purchased from animal blood banks, but we also have an in-house colony of donor cats and dog donors owned by our employees. The most common reasons for a transfusion in our patients are acute blood loss, clotting abnormalities and red blood cell destruction secondary to immune mediated destruction.

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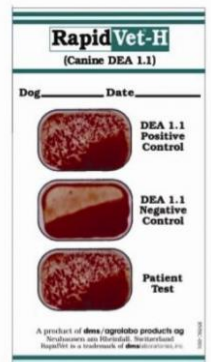


What blood types do dogs and cats have?

Dog-erythrocyte-antigens (DEAs) define a dog's blood type, with DEA 1.1 is the most important. Dogs are either DEA 1.1 positive or DEA 1.1 negative. DEA 1.1 negative is considered the universal donor. In cats, recognized types include Types A, B and AB. There is NO universal cat donor. Fatal transfusion reactions will occur in cats if given the wrong type of blood. If a cat is typed AB, then a more intensive cross-match must be done to make sure the transfusion will be compatible. Type B cats are typically pure bred cats, like the British Shorthair, Cornish Rex and Devon Rex cats. Other breeds with significant percentages of Type B blood include the Abyssinian, Himalayan, Japanese Bobtail, Persian, Somali and Sphinx breeds.

Do my patients need to be crossmatched?

Administering type-specific blood products minimizes transfusion reactions, but it does not prevent the sensitization of the recipient immune system to subsequent transfusions. Within 10 days of a transfusion, the recipient's immune system will be programmed to react if ever exposed to similar antigens. For this reason, once a patient receives a blood transfusion, a cross-match is required for all subsequent transfusions (provided the patient is stable enough to wait for a crossmatch—otherwise DEA 1.1 negative blood is recommended). Cats are ALWAYS typed and cross-matched without exception. Cross-matching allows us to make sure that the donor and recipient's blood will be compatible prior to administration.



A canine blood typing card for rapid results

What type of blood products are available and when do I use them?

- Whole blood: Fresh and stored whole blood contains red blood cells and plasma. Indicated for whole blood loss.
- Packed red blood cells (RBCs): Contains only red blood cells. Indicated for red blood cell destruction typically seen with IMHA
- Plasma: Contains just proteins and clotting factors. Used to treat coagulopathies including rat poison ingestion. Plasma is NOT indicated for protein (albumin) loss as the protein in plasma is not concentrated enough.
- Cryoprecipitate: Contains the same components as plasma, but also a concentrated source of von Willebrand's factor (vWF). Indications include treating dogs that are lacking vWF as a birth defect during a bleeding crisis and administration prior to a surgical procedure for vWF deficient patients to prevent bleeding
- Platelet-rich plasma and platelet concentrates: Contains the same components as plasma, but enriched with platelets. These are indicated in patients with low platelets and life-threatening bleeding. These products are not routinely used to treat immune mediated thrombocytopenias as the destruction is rapid and the transfused platelets are rapidly destroyed.

How are these blood products given?

Blood products are typically administered intravenously, but can also be given intra-osseously and intra-peritoneally. A filter set is recommended to prevent any clots or debris from being administered. The rate of administration depends on how quickly blood loss occurred. With acute life-threatening bleeding, blood is given as quickly as possible. If the patient is stable and not clinical for blood loss (i.e. normal heart rate, breathing rate/effort and normal blood pressure), then a unit of blood or plasma is typically administered over 4-6 hours. During a transfusion, temperature, heart rate, respiratory rate and blood pressure are obtained every 15 minutes for the first hour, then every 30 minutes thereafter through the remainder of the transfusion. Patients are also monitored for signs of nausea, vomiting, hives or facial swelling. Delayed immunologic transfusion reactions can occur, resulting in red blood cell lysis which results in red urine, or can even cause icterus if the body cannot deal with these destroyed cells.

Blood product transfusions, are life-saving products in our critically ill patients. As with any therapy, the risks must be considered in addition to cost and potential benefits. Every effort must be made to minimize the occurrence of adverse effects. Our critical care specialists and internal medicine specialists are familiar with the various transfusion products, their indications and side effects and use these products on a daily basis. If you have any questions or feel that one of your patient would benefit from transfusion therapy, please call our Internal Medicine & Critical Care Team at (713)-693-1144.

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