

OVERVIEW OF FELINE



TRANSFUSION MEDICINE

With the increased interest in feline medicine and surgery, transfusion therapy has become an integral part of the supportive management of critically ill and anemic cats. An Eastern US veterinary school has tripled its number of feline transfusions in the last decade and anemia is by far the most common medical indication for transfusion in the cat (75%). Feline anemia may be caused by: 1) blood loss due to trauma, surgery or even fleas; 2) hemolysis induced by toxins (Heinz bodies) FeLV infection and chronic renal disease. About 25% of all transfusions are given to non-anemic cats for other reasons (e.g. cats with hepatopathy induced coagulopathy scheduled for a liver biopsy). Because of the difficulties associated in preparing blood components from small whole blood units, anemic cats are most commonly transfused with fresh/stored whole blood rather than blood components. Furthermore, bleeding disorders and hypoalbuminemia occur relatively rarely in cats and are often associated with anemia; these cats most commonly receive fresh whole blood rather than component therapy.

FELINE BLOOD TYPES

The AB blood group system, the only one recognized in cats, consists of 3 blood types: type A, type B and type AB. Type A is the most common blood type. Domestic short hair cats had over 95% of blood type A in a study conducted by University of Pennsylvania Veterinary School. Some purebred cats are much more likely to have type B (i.e. Devon Rex cats were found to be 40% type B), while Siamese were 100% type A. The type AB is extremely rare in domestic cats.

In contrast to dogs, cats possess naturally occurring alloantibodies against the blood type they lack. In particular, all type B cats have very strong anti-A antibodies which can result in life threatening reactions such as neonatal isoerythrolysis and transfusion reactions. Type A cats have generally much weaker anti-B antibodies and do not appear to be susceptible to neonatal isoerythrolysis. Since cats do not need to be sensitized by a prior transfusion or pregnancy to develop

alloantibodies, incompatibility reactions can occur with the first blood transfusion.

For feline blood typing, a commercial kit from DMS Labs (1-800-567-4367) is available. This is a simple card agglutination test.

Because of the presence of these alloantibodies, no universal feline blood donor exists and only typed matched blood can be used for effective and safe transfusion.

FELINE BLOOD DONOR

Many clinics have identified a few typed cats for their needs. Type A is by far the most common blood and thus common donors should have type A. Type B is more common among purebred cats. The ideal feline blood donor is a short haired but lean, young cat. Splenectomy is not recommended. Cats may donate up to 10 -12 mls of whole blood per kg of body weight, corresponding to a feline unit of 50 - 75 mls from a 5 - 6 kg cat. However, feline donors should be given some IV fluids if more than 50 mls of whole blood is removed. Cats may need to be sedated during blood collection.

FELINE COLLECTION TECHNIQUE

The collection apparatus consists of a 19 gauge butterfly catheter connected to a 3-way stopcock. 7 mls of an anticoagulant are drawn into a 60 ml syringe that is then attached to the through port of the 3-way stopcock. The butterfly is inverted into the jugular and 50 mls of blood are drawn into the syringe. The stopcock is closed to the bag during this portion of the procedure. Once the collection is completed, the catheter is removed from the cat and the syringe is inverted several times to mix the anticoagulant solution with the whole blood. Then the stopcock is opened to the bag and the blood gently transferred to the bag. (The JorVet J-520A 50-150 ml blood bag is suggested for feline use.)

Practitioners in a busy feline practice may decide to keep 1-2 units on hand at all times and call in donors as needed when supplies run low. Cats with a critically low PCV are encountered frequently - why not consider transfusion therapy as a viable therapy?



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