Expert Guide

Step by step guide to the administration of canine red cell products

pet blood bank uk

As the UK's trusted pet blood banking charity, we provide quick access to high quality products as well as expert advice and guidance when you need it most.

We hope this guide is useful.
If you have any further queries, please contact our team.

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Contents

Equipment

- Unit of Packed Red Blood Cells (PRBC) or Stored Whole Blood (SWB) removed from the refrigerator or Fresh Whole Blood (FWB)
- Zip lock bag
- Clean bowl/tray to act as a water bath to warm the product
- Min/Max thermometer
- Blood administration set
- Drip stand
- Examination gloves
- Recipient prepared with central or peripheral IV access. The catheter should have been flushed with sterile 0.9% saline and capped with a sterile bung
- Alcohol wipes
- Transfusion monitoring form

Warming

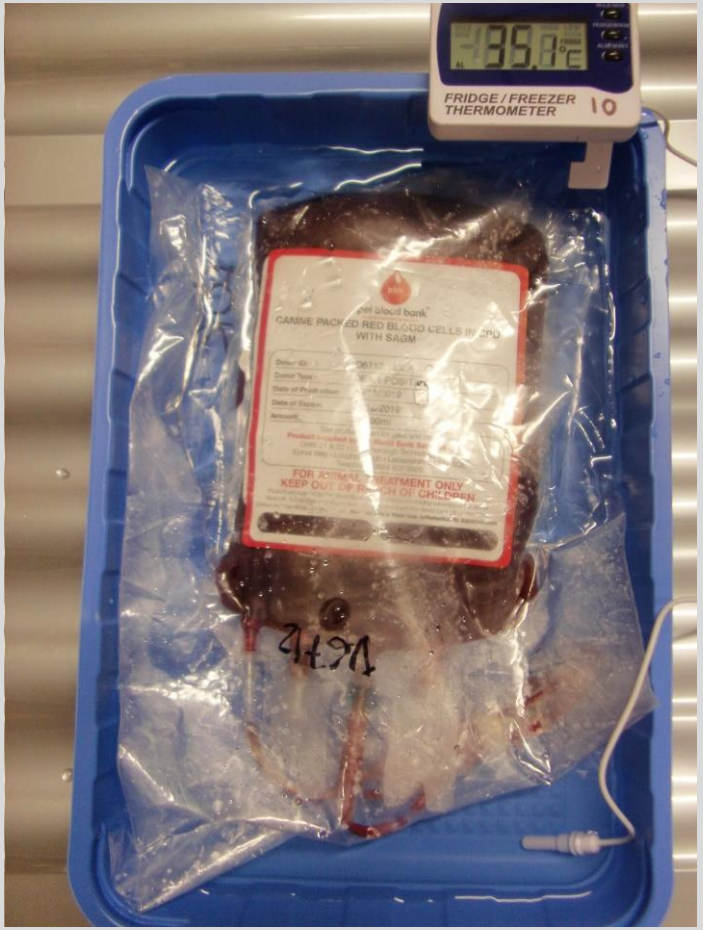
Step 1

Before administration, the selected red cell unit can be warmed if required, although research has shown warming the unit to be inefficient, and that unless being transfused very rapidly the blood will have cooled to room temperature before reaching the recipient.

In the absence of a commercial blood warmer, the unit can be warmed using a warm water bath although the duration of warming using this method has not been defined.

Seal the unit into a plastic zip lock bag to prevent contamination of the administration ports. Place the zip lock bag into a clean container and add water that is no warmer than 37°C.

Gently agitate the unit throughout warming and remove the unit once the desired temperature has been reached as determined by feeling the unit.



Step 1

Preparation

Steps 2 and 3

Once warmed, the red cell unit should be removed from the plastic zip lock bag and hung on a drip stand. Wearing gloves, access one of the administration ports on the blood unit by tearing the protective cover using aseptic technique.

Step 2 & 3

Preparation

Step 4

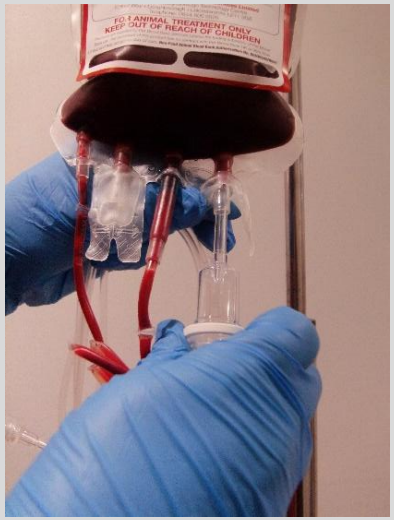
Remove a blood administration set from its outer packaging and prepare for use by closing off the in-line C clamp (where present) and the drip wheel.

Note: A standard blood administration set will usually administer 20 drops/ml

Step 4

Steps 5 and 6

The insertion spike is unsheathed in an aseptic manner and pushed into the red cell unit via the revealed administration port ensuring it is fully inserted to reach the red cells.



Step 5

The red cell unit is now breached and must be discarded after 4 hours.

Step 6

Preparation

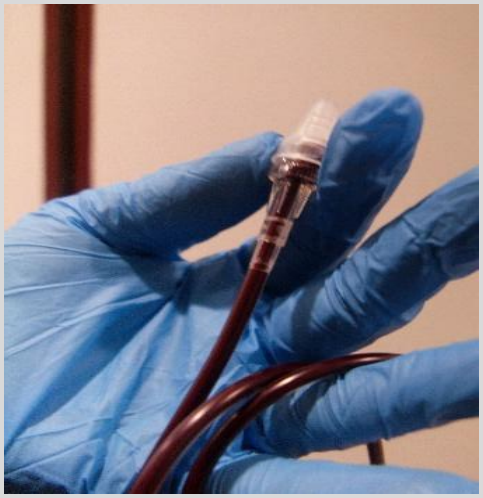
Step 7

Fill the drip chamber to approximately half to two thirds taking care not to damage the chamber filter. Ensure the fill level is above the filter but not so full that the drip rate cannot be observed. Open any clamps on the administration line.

Step 7

Step 8

Slowly release the drip wheel to prime the entire length of the administration line to the very end. Do not remove the cover.



Step 8

Step 9

Always keep the blood administration set off the floor.

Once primed and with no air bubbles present in the administration line, the red cell unit is ready to attach.

Step 9

Attaching the unit

Step 10

Disinfect the intravenous catheter port with an alcohol wipe. Flush the intravenous catheter with a good volume of 0.9% saline to confirm placement.

Disinfect the catheter port again and remove the cap from the end of the administration set and aseptically attach to the intravenous catheter port.

The red cells are now ready to transfuse.

Step 10

Filtration of blood products

All blood products must be administered through a microaggregate filter (normally 170-260 micron) to facilitate removal of any small clots and other debris. These filters may be an integral part of the lines, for example in a blood administration set or may be attached between the blood product and the patient if the blood is being delivered from a syringe.

This is more common with felines and small canine patients where blood volumes are typically small. It may also be used where slower infusion rates are to be used to avoid the blood remaining out of the fridge for greater than 4 hours and reduce wastage of any remaining blood. Refer to our Blood Unit Separation Guide for instructions on how to separate blood units into smaller volumes.

Notes on the SA150 Blood Filter

1. Pet Blood Bank supply the SA150 filter (Fig.1). This is a 150 µM filter.
2. The blood filters can be used to filter 250ml of blood product.
3. A new filter must be used for each new unit.
4. The filter should be discarded after 4 hours

Fig. 1 SA150 blood filter

Pet Blood Bank advises that a new blood administration set, and intravenous extension line is used for each new unit and that these are also discarded after 4 hours.

Transfusion information

Compatibility

Performing appropriate pre-transfusion testing such as DEA 1 blood typing and cross matching previously transfused dogs increases recipient safety and maximises erythrocyte lifespan.

Dose rates

Please refer to individual product data sheets for dose rates.

As a general estimate

2ml/kg of Whole Blood or 1ml/kg of Packed Red Blood Cells will raise PCV by 1 percentage point or the haemoglobin level by 0.3g/dl.

Dosage may need to be more or less depending on the recipient.

Monitoring

Every recipient should be monitored as to their individual response.

It is recommended that recipient be monitored using a transfusion

monitoring form, available to download from Pet Blood Bank's website.

Please ensure the product unit ID is recorded on the recipient's record.

Transfusion rates

The calculated dose should be given within 4 hours to euvolaemic recipients.

Start transfusion at a rate of 0.5-1ml/kg/hr for the first 15-30 minutes, according to recipients' fluid status, if hypovolaemic, at rates up to shock doses (as fast as blood is being lost), if euvolaemic 5-10ml/kg/hr, if compromised circulation (cardiovascular compromise/renal failure) 1-2ml/kg/hr.

Thank you for using this guide.
We hope you found it useful.

To make transfusion medicine as easy for you as possible, we also provide:

- Blood deliveries around the clock
- Quality tested products that reduce the risk of complications
- Advice on cross matching and selecting blood products
- Administrative equipment

For more information about our blood products,
or to get further advice, please contact us

01509 232 222 petbloodbankuk.org

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