

### General remarks

- Blood transfusion can be lifesaving, but is not entirely without risk.
- Adverse events caused by infectious agents may originate from:
  - contamination of blood following incorrect collection, storage or transfusion;
  - transfusion of contaminated blood obtained from an infected donor.

### Prevention of contamination

- Use strict aseptic technique during the multistep manipulation of syringes and other devices used for blood collection, even in an emergency.
- Limit the delay between collection and transfusion.
- Visually inspect blood bags prior to transfusion and discard if change in colour or other visible abnormality.

### Prevention of disease transmission

- The worldwide core screening panel for donor cats includes:
  - feline leukaemia virus (FeLV provirus PCR)
  - feline immunodeficiency virus (serum/plasma FIV antibody test)
  - *Bartonella* spp (antibody immunofluorescence or PCR)
  - feline haemoplasma (blood PCR for *Mycoplasma haemofelis*, *Candidatus Mycoplasma haemominutum*, *Candidatus Mycoplasma turicensis*)
- In endemic areas, the panel should include tests for feline vector-borne infections, such as:
  - *Anaplasma phagocytophilum* (antibody detection and blood PCR)
  - *Leishmania infantum* (blood PCR)
  - *Cytauxzoon felis* (blood PCR) – rare in cats in Europe
  - *Babesia* spp (blood PCR) – rare in cats in Europe
  - *Ehrlichia* spp (blood PCR) – rare in cats in Europe

- Although there have been no reports of feline infectious peritonitis (FIP) following blood transfusion in cats, FCoV-antibody negative blood donors are preferred.
- In emergency cases, donors should at least be screened for FeLV/FIV (in-house rapid tests) and undergo a complete blood count, biochemical profile and urinalysis.
- Xenotransfusion (e.g. from dogs) should be restricted to exceptional circumstances (risk of delayed immune-mediated haemolysis, short life span of the transfused erythrocytes, transmission of certain vector-borne infections).

### Blood donors

- The most useful, practical, rapid and cost-effective measure to reduce the risk of transmission of blood-borne infectious agents is to select low-risk donor cats.
- Ideal profile of a low-risk blood donor cat:
  - Healthy adult individual (> 3 years old, to reduce the risk of *Bartonella* bacteraemia)
  - Indoor-only lifestyle and living in the same single-cat household since a kitten
  - Absence of fleas and ticks and regularly treated against ectoparasites
  - Not adopted as stray or from a shelter
  - Not bought from a breeder or a pet shop
  - Never travelled abroad
  - Never suffered from vector-borne diseases
  - Vaccination status up to date
- For welfare reasons, the ABCD does not recommend the use of cats specifically bred for blood banks.



- Transfer of blood collected with syringes into a single, plain blood collection bag through the injection port.

Image courtesy of Eva Spada, University of Milan, Italy.



Image courtesy of Maria Grazia Pennisi, University of Messina, Italy.

- Topical application of blood serum is used empirically as anticollagenolytic treatment in the medical management of deep corneal ulcers.
- List of core pathogens to be screened for candidate blood donors.

Pathogen	Diagnostic test*
FeLV	FeLV provirus PCR
FIV	Rapid anti-FIV antibodies test on blood serum
<i>Mycoplasma haemofelis</i>	
<i>Candidatus Mycoplasma haemominutum</i>	Blood PCR
<i>Candidatus Mycoplasma turicensis</i>	
<i>Bartonella</i> spp	Anti- <i>Bartonella</i> antibodies (IFAT) or PCR

\* In life-threatening emergency situations, donors should at least be screened for FeLV/FIV (in-house rapid tests), but owners should be informed about the higher risk of the transmission of blood-borne agents.