# Hemobartonellosis

Feline Infectious Anemia or Hemotrophic Mycoplasmosis

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**Animal Group(s) Affected**: Felids, Canids, Ursids

**Transmission**
- Blood sucking arthropods: fleas and ticks. 
- Vertical: *in utero*, during parturition, or lactation. 
- Horizontal: bite wounds. 
- Iatrogenic: blood transfusion or infected needles.

**Clinical Signs**
- Fever 
- Anorexia 
- Weight loss 
- Anemia 
- Tachycardia 
- Splenomegaly 
- Vomiting

**Severity**
Can vary from mild to severe and can lead to death in some animals.

**Treatment**
- Antibiotics; blood transfusion; steroids if an immune mediated component is suspected

**Prevention and Control**
- Eliminate and prevent arthropods

**Zoonotic**
Yes

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**Susceptible animal groups**: Felids, canids, ursids

**Causative organism**: *Mycoplasma haemofelis* (formerly *Hemobartonella felis*, *Eperythrozoon felis* and *candidatus, Mycoplasma haemofelis*), *M. haemominutum*, *M. turicensis* and *M. haemocanis*

**Zoonotic potential**: Yes, one report in an immunodeficiency virus-infected human co-infected with *Mycoplasma haemofelis* and *Bartonella henselae* in Brazil

**Distribution**: Worldwide

**Incubation period**: In the domestic cat, it takes 2-17 days from infection until parasites are seen in blood. Peak parasitemia occurs over 1-5 days. Clinical signs generally begin 1 month after infection.

**Clinical signs**: Commonly, fever, anorexia, and weight loss are observed. Additionally, tachycardia, anemia, decreased hemoglobin, slight to moderate icterus, vomiting, and splenomegaly may be seen.

**Post mortem, gross, or histologic finding**: No pathognomonic postmortem findings are associated with this disease. Emaciation, splenomegaly (2-5 x normal size), friable spleen, icterus, and bone marrow hyperplasia may be observed.

**Diagnosis**: PCR is the most reliable diagnostic tool for hemobartonellosis. Blood smear should be examined by direct microscopy before starting treatment. Organisms may be found in fresh, uncoagulated blood smear. These smears should be examined daily for 5-7 days since parasitemia is cyclic. Parasites are found on the surface of the erythrocyte (extracellular) or free in the smear. It is recommended to use Giemsa, Wright-Giemsa, May-Gruenwald-Giemsa, or Wright-Leishman stains to be able to differentiate this organism from stain precipitate, refractile artifacts, and *Cytauxzoon*; the latter is intracellular, normally found in the center and occurring singly. Direct Coombs’ test may be positive in some species during the acute phase.

**Material required for laboratory analysis**: Microscope, blood smear slide, and stain. Blood in EDTA and standard blood shipment supplies to submit for PCR.

**Relevant diagnostic laboratories**: Most commercial veterinary laboratories can examine blood smears and submit a sample for PCR testing.

**Treatment**: Common treatments in domestic cat include tetracycline, doxycycline, or enrofloxacin. If
HEMOBARTONELLOSIS
(FELINE INFECTIOUS ANEMIA OR HEMOTROPHIC MYCOPLASMOSIS)

Severe anemia is present, consider glucocorticoid treatment such as prednisolone.

**Prevention and control:** Prevent and eliminate arthropod vectors (flea and tick control). Blood for transfusion should be PCR tested.

**Suggested disinfectant for housing facilities:** Standard cleaning and disinfection of areas to remove blood and control of ectoparasites should eliminate the organism from housing facilities.

**Notification:** Currently none.

**Measures required under the Animal Disease Surveillance Plan:** Currently none.

**Measures required for introducing animals to infected animal:** Eliminate fleas and ticks. In nondomestic cats, negative animals have been housed with positive animals without evidence of horizontal transfer. However, since carrier state may occur, the possibility of transmission in animals with direct contact or close enough to share ectoparasites should be considered.

**Conditions for restoring disease-free status after an outbreak:** Treat affected animals, eliminate ectoparasites, and prevent exposure to new ectoparasites. Due to carrier state, may not be able to consider a population disease-free.

**Experts who may be consulted:**
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**References:**

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