

# BARTONELLOSIS

FECAVA WORKING GROUP  
ON ZONOSIS

## 1. DISEASE

Cat-scratch disease, Teeny's disease

## 2. NAME, DEFINITION, ETIOLOGICAL SPECIES

*Bartonella henselae*, a Gram-negative rod (class *Alphaproteobacteria*, family *Bartonellaceae*)

- Cat-scratch disease (CSD) is a cat-associated zoonosis caused by *B. henselae*.
- CSD is distributed wherever cats can be found, although its worldwide incidence is unknown due to the fact that it is a non-reportable disease.
- Infections by other vector-borne *Bartonella* spp. (*B. quintana* and *B. bacilliformis*, transmitted by body lice and sand flies, respectively) are also of importance for human medicine and differentiation is required.

## 4. CLINICAL SIGNS, IF THERE ARE ANY

- The majority of the infected cats do not develop clinical symptoms.
- Feline bartonellosis may occasionally occur in the form of a transient, self-limiting illness lasting 2-3 days.
- Rare severe symptoms include lethargy, reduced appetite, fever, ocular manifestations, and enlarged lymph nodes.
- Dogs can also be infected with *Bartonella* spp. and present a similar spectrum of clinical symptoms those of affected humans, including endocarditis.



## 3. DESCRIPTION OF THE ANIMAL RESERVOIRS

- Cats are the primary although not the only reservoirs of *B. henselae*.
- Cats may also harbor other *Bartonella* spp. along with other animal species.
- Approx. 40% of the cats carry *B. henselae* at some time during their lives.
- The prevalence in cats aged less than one year is higher than in adult cats.
- Domestic or feral cats can be infected by fleas that carry the bacterium.
- Fights between cats or infected blood transfusions can also be a source of infection for naïve cats.



## 5. WAY OF TRANSMISSION TO HUMANS

- The bacterium is present in the oral cavity of cats and is transmitted to humans either via bites and/or scratches, contaminated with flea excrements, or through licks of a person's open wounds.
- Direct transmission by bites of infected fleas or from dogs to humans is not confirmed.

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## 6. CLINICAL SIGNS IN HUMANS

- The incubation period is typically 3-14 days post-infection.
- Symptoms start with an erythematous skin papule at the site of infection.
- Regional lymphadenopathy follows, often involving the axillary lymph node.
- Lymph nodes are initially firm and tender, and can later become enlarged, fluctuant or painful. A fistula can also be formed.
- Lymphadenopathy is accompanied by general signs, including malaise, fever, reduced appetite, and headache.
- Endocarditis, encephalitis, transverse myelitis, neuroretinitis, and granulomatous conjunctivitis comprise rare but serious forms of CSD that require intensive treatment.
- These rare signs may occur in immunocompromised people or young children, however in general they are not fatal.

## 7. DIAGNOSIS IN HUMANS

- The disease may be presumptively diagnosed by the typical signs and a compatible exposure history.
- The diagnosis can be confirmed serologically via immunofluorescence (IFA), preferably in paired sera. However, result interpretation may be hampered due to low sensitivity and immunological cross-reactivity with other *Bartonella* spp.
- *B. henselae* can be detected in blood, CSF or tissue samples via PCR. Lymph node aspiration is recommended only in cases where the diagnosis is not clear. Endocarditis can be diagnosed by serology and by culture or PCR performed on excised heart valve tissue.
- Isolation of *B. henselae* can be accomplished through cultures, although this approach is technically challenging since the microorganism is fastidious and a minimum incubation period of 3 weeks is required.

## 8. PREVENTION OF THE DISEASE

- Regular use of products that provide flea protection on pet cats.
- Keeping pet cats indoors minimizes contact time with stray cats and reduces the possibilities for flea infestation.
- Contact between people (especially immunocompromised) and cats, or between pets and stray cats should be limited.
- Rough play with cats, especially feral should be avoided, as it may result in bites or scratches.
- Any cat bites or scratches should be washed immediately with warm water and soap.

## DIAGNOSIS IN ANIMALS

- IFA comprises the most sensitive diagnostic approach to reveal exposure to *B. henselae*. The detection of specific antibodies, however, cannot identify animals that require treatment or those that may pose a public health risk.
- Confirmation of the infection in animals with clinical signs is accomplished via isolation of *B. henselae* from blood, lymph nodes, or heart valve in cases of endocarditis.
- PCR assays comprise sensitive and specific tools for the identification of *B. henselae* in tissues and saliva.

