

# Bartonella

**General:** Bartonella (formerly known as Rochalimaea) is a genus of Gram-negative bacteria. Facultative intracellular parasites, Bartonella species can infect healthy persons but are considered especially important as opportunistic pathogens. Bartonella are transmitted by insect vectors such as ticks, fleas, sand flies and mosquitoes. At least eight Bartonella species or subspecies are known to infect humans. *Bartonella henselae* is a proteobacterium that can cause bacteremia, endocarditis, bacillary angiomatosis, and peliosis hepatis. It is also the causative agent of cat-scratch disease (Bartonellosis, Reticulosis benigna, also caused by *Afipia felis*) which occurs after a cat bite or scratch.

**Cat-scratch disease:** starts with a papule on infected skin. About 2 weeks after the infection, one or more lymph nodes appear in the neck area or in the upper extremities for 2 weeks up to 2 years. Long lasting fever can be observed in 1/3 of all cases. Further symptoms are headache, loss of appetite, more rarely arthralgia or eye involvement with painless conjunctival granuloma, exanthema and splenomegaly. In uncomplicated cases spontaneous healing is observed after 2-4 months. Systemic complications are rare and present with neurological symptoms 1-6 weeks after lymphadenopathy: encephalopathy, spasms, paraplegia, coma, neuroretinitis, radiculitis or polyneuritis. The symptoms usually last about two weeks and then disappear without residual damages.

**Therapy:** The typical cat scratch disease heals spontaneously in most cases; therefore an antibiotic therapy is not necessarily required. Antibiotics of the first choice are ciprofloxacin, cotrimoxazol, erythromycin, doxycyclin, minocyclin; resistant agent: gentamicin, other aminoglycoside, rifampicin. Diff. diagnosis: EBV, CMV, toxoplasmosis, Chlamydia trachomatis.

Peliosis hepatis: caused by *B. henselae* can occur alone or develop with cutaneous bacillary angiomatosis or bacteremia. Patients with peliosis hepatitis present with gastrointestinal symptoms, fever, chills, and an enlarged liver and spleen containing blood-filled cavities. This systemic disease is seen in patients infected with HIV and other immunocompromised individuals.

*Bartonella quintana*: also known as *Rochalimaea quintana*, is a microorganism that is transmitted by the human body louse and is the etiologic agent. The first clinical manifestation is attributed to Bartonella quintana, affected an estimated > 1 million people during World War I and was mentioned for the first time in 1915 as two types. The first was characterized by a sudden onset of headache, dizziness, pain in the shins, and elevated temperature (39-40°C). Between days 3 and 7, temperature would suddenly drop to normal or subnormal. Thereafter, temperature rose sharply before falling again. The second manifestation of the disease was characterized by a shorter initial period and frequent relapses.

## Bartonella species:

| Species                 | Human reservoir or incidental host | Animal reservoir | Pathophysiology  | Distribution                |
|-------------------------|------------------------------------|------------------|--|-----------------------------|
| <i>B. bacilliformis</i> | Reservoir                          |                  | Causes Carrion's disease (Oroya fever, Verruga peruana)  | Peru, Ecuador, and Colombia |
| <i>B. quintana</i>      | Reservoir                          |                  | Causes Trench fever, Bacillary angiomatosis, and endocarditis  | Worldwide                   |
| <i>B. clarridgeiae</i>  | Incidental                         | Domestic cat     | Cat-scratch Dis-ease   |                             |
| <i>B. elizabethae</i>   | Incidental                         | Rat              | Endocarditis   |                             |
| <i>B. grahamii</i>      | Incidental                         | Mouse            | Endocarditis and Neuroretinitis  |                             |
| <i>B. henselae</i>      | Incidental                         | Domestic cat     | Cat-scratch Dis-ease, Bacillary angiomatosis, Peliosis hepatis, Endocarditis, Bacteremia with fever and Neuroretinitis | Worldwide                   |
| <i>B. koehlerae</i>     | Incidental                         | Domestic cat     |  |                             |
| <i>B. vinsonii</i>      | Incidental                         | Mouse, Dog       |  |                             |
| <i>B. washoensis</i>    | Incidental                         | Squirrel         | Myocarditis  |                             |
| <i>B. rochalimae</i>    | Incidental                         | Unknown          | Carrion's disease like symptoms  |                             |

The following tests are available:

- **Bartonella henselae IgG antibodies**

Material: 1 ml serum

TAT: 7-10 days\*

Method: IFT

Units: Titer

Ref.- range: <1:64

- **Bartonella henselae IgM antibodies**

Material: 1 ml serum

TAT: 7-10 days\*

Method: IFT

Units: Titer

Ref.- range: <1:20

- **Bartonella henselae DNA, PCR**

Material: 1 ml lymph node biopsy, tissue, aspirate (no serum!)

TAT: 7-10 days\*

Method: PCR

Ref.- range: see report

- **Bartonella quintana IgG antibodies**

Material: 1 ml serum

TAT: 7-10 days\*

Method: IFT

Units: Titer

Ref.- range: <1:64

- **Bartonella henselae IgM antibodies**

Material: 1 ml serum

TAT: 7-10 days\*

Method: IFT

Units: Titer

Ref.- range: <1:20

For complete list of laboratory test offered at Freiburg Medical Laboratory, please visit

<http://www.fml-dubai.com/parameter-listings/>