

Rickettsiales

Rickettsiales

- Microorganisms belonging to Rickettsiales were previously thought to be prozoota.
- However, they are now classified in the bacteria taxonomy.
- Nevertheless, they are often handled with protozoology because of their association with blood parasites and vectors.
 - Anaplasmosis
 - Aegyptianellosis
 - Ehrlichiosis
 - Cowdriosis
 - Spotted fever group rickettsiae

Anaplasmosis

- The bacteria belonging to anaplasmatacea
 - *A. marginale* and *A. centrale* in cattle and camel
 - *A. phagocytophilum* various animals including cattle and dog, and humans
 - *A. ovis* in sheep
 - They are common in Turkey.
- Hosts
 - Ruminants
 - They multiply in erythrocytes and have point-shaped appearance without the cytoplasm.
- Vectors
 - Ticks (biologically) (*Dermacentor*, *Rhipicephalus*, *Ixodes*, *Hyalomma* and *Ornithodoros* genuses)
 - Biting flies (mechanical) (Tabanidae and *Stomoxys* spp.)
 - Blood transfusion and contaminated surgical instruments.

Anaplasmosis

- Clinical findings
 - It is important especially in highly productive animals.
 - The severity of the disease increases with age.
 - Fever and progressive anemia are the most obvious symptoms.
- Diagnosis and treatment
 - Clinical findings
 - Microscopic examination of thin blood smear.
 - Tetracycline groups antibiotics and imidocarb are used for treatment.

Aegyptianellosis

- *Aegyptianella pullorum* and *A. moshkovskii*
 - The status of these agents is not known in Turkey.
- Hosts
 - Chicken, turkey, goose, duck and other birds.
 - They locate in erythrocytes.
- Vector
 - *Argas persicus*
 - They can be transported by the blood inoculation.
- Symptoms
 - Fever, inappetency, anemia, icterus, weakness, cachexia and green diarrhea.
- Diagnosis and Treatment
 - Clinical findings.
 - Thin blood smear, serological and molecular methods can be used for diagnosis.
 - Oxytetracycline, chlortetracycline are effective in treatment.
 - Tick control.

Ehrlichiosis

- *E. ondiri* and *A. bovis* (*E. bovis*) in cattle
- *E. ovina* in sheep
- *E. canis* and *E. ewingii* in dogs. *A. bovis*
- *A. phagocytophilum* (*E. phagocytophila* and *E. equi*) in cattle, sheep, dog, equids, other ruminants and humans.
- *A. platys* (*E. platys*) in dogs
- *E. chaffeensis* in humans.
 - *E. canis* and *A. phagocytophilum* have been reported from Turkey.
- **Location sites**
 - *E. canis*, *A. bovis*, *E. chaffeensis*, *E. ovina* in mononuclear leucocytes (lymphocyte, monocyte);
 - *A. phagocytophilum*, *E. ondiri*, *E. ewingii* in granulocytic leucocytes (neutrophil, basophil, eosinophil).
 - *A. platys* in platelets.

Ehrlichiosis

■ Vectors

- *Amblyomma*, *Rhipicephalus*, *Hyalomma* and *Ixodes* spp.
- Transstadial transmission

■ Clinical findings

- Pancytopenia and thrombocytopenia are seen in *E. canis* infection.
- Bleeding that can not be controlled by the cause of platelet failure and seconder infections due to leukocyte failure are seen.

■ Diagnosis and Treatment

- Clinical findings
- The observation of initial bodies and morula in blood smears
- Doxycycline, oxytetracycline, tetracycline can be used for treatment.
- Tick control is important for prevention.

Cowdriosis (Heart water)

- *Ehrlichia ruminantium* (*Cowdria ruminantium*)
 - It does not exist in Turkey.
- Hosts
 - Cattle, sheep, goat and other ruminants.
 - The agents multiply in endothelial cells located in nervous system, kidney, spleen, lymph nodes, salivary glands and heart muscle.
- Vectors
 - *Amblyomma* spp.
- Clinical findings
 - They can cause severe neurological symptoms.
- Diagnosis and treatment
 - The observation of the agents in capillary endothelial cells.
 - Oxytetracycline is effective in early period.

Spotted fever group rickettsiae

- *Rickettsia aeschlimannii*
- *Rickettsia africae*
- *Rickettsia slovaca* (SENLAT)
- *Rickettsia raoultii* (SENLAT)
- *Rickettsia sibirica mongolitimonae*
- *Rickettsia conorii* (Mediterranean spotted fever)
- They cause infection in humans
- They have been reported from Turkey.

Ticks and Tick-borne Diseases 5 (2014) 213–218

Contents lists available at ScienceDirect

Ticks and Tick-borne Diseases

journal homepage: www.elsevier.com/locate/ttbdis



Short communication

Spotted fever group rickettsiae in ticks in Turkey

Ömer Orkun*, Zafer Karaer, Ayşe Çakmak, Serpil Nalbantoğlu

Department of Parasitology, Faculty of Veterinary Medicine, Ankara University, Ankara 06110, Turkey



***Rickettsia sibirica mongolitimonae* Infection, Turkey, 2016**

Ferit Kuscu, Omer Orkun, Aslihan Ulu, Behice Kurtaran, Suheyla Komur, A. Seza Inal, Damla Erdogan, Yesim Tasova, Hasan S.Z. Aksu

Author affiliations: Cukurova University Faculty of Medicine, Adana, Turkey (F. Kuscu, A. Ulu, B. Kurtaran, S. Komur, A. Seza Inal, D. Erdogan, Y. Tasova, H.S.Z. Aksu); Ankara University Faculty of Veterinary Medicine, Ankara, Turkey (O. Orkun)

DOI: <https://dx.doi.org/10.3201/eid2307.170188>

Rocky Mountain Spotted Fever

■ Hosts

- *Rickettsia rickettsi* causes disease in mostly humans and dogs.

■ Vectors

- The ticks belonging to *Dermacentor*, *Rhipicephalus* and *Amblyomma* genus.
- It is transmitted by ticks as transovarial and transstadial.
- Rodents play a reservoir role for this pathogen.

■ Clinical findings

- Fever, lethargy, mental dullness, inappetence, lymphadenopathy, hyperemia of mucosal surfaces.

■ Diagnosis and treatment

- Serological and molecular methods are used for diagnosis.
- Tetracyclines can be used for treatment.

- This agent has not been reported from Turkey.