Rickettsia

Rickettsial diseases are caused by a variety of obligate intracellular, gram negative bacteria from the genera Rickettsia, Orienta, Ehrlichia, and Coxiella. These organisms are all gram negative obligate intracellular parasites that cannot survive outside host cells. These organisms require CoA and NAD+ for replication that it must obtain from eukaryotic hosts. Ricketssial infections that cause diseases in humans include Rocky Mountain spotted fever, typhus, Ehrlichiosis. All these except Q fever are transmitted by arthropod vectors like ticks, fleas, and lice and have similar disease presentations including headache, fever, and rash. Q fever, caused by Coxiella burnetii, is an atypical Rickettsia because it is not transmitted from an arthropod vector and does not cause a rash. Rickettsial diseases also have a positive Weil-Felix reaction while Coxiella infections do not.



PLAY PICMONIC

Need CoA and NAD
Coin A and (NAD) Nicotine Character
These organisms are obligate intracellular organisms that require CoA and NAD from eukaryotic host cells to survive.

Rocky Mountain spotted fever
Rocky Mountain and Spotted Fever-beaver
This is the most lethal and common Rickettsial infection in the United States, caused by the bacteria Ricketssia rickettssii. Signs and symptoms include sudden onset of fever, headache, muscle, and rash.

Typhus
Typhoon on a Tablet
Typhus is caused by several species of Ricketssia including Rickettsia prowazekii and Rickettsia typhi. Common symptoms include chills, high fever, joint pain, severe headaches and muscle pain. Typhus also has a rash that characteristically starts on the trunk and spreads outward without involving the palms or soles.

Ehrlichiosis
Ear-lick
Tickborne bacterial infection can infect and kill white blood cells. Common symptoms include headache, muscle aches, and fatigue. A rash may occur but is not common.

Q fever
(Q) Queen Fever-beaver
It is important to know that Q Fever is not in the Rickettsia genus, but is closely related. Q fever is the disease caused by Coxiella burnetii and commonly manifests as flu-like symptoms with fever, malaise, myalgia, nausea, vomiting, and diarrhea. During the course of disease, it can progress to pneumonia, which can result in life-threatening acute respiratory distress syndrome.

Arthropod vector
Tick
Many of the Rickettsial disease are transmitted by arthropod vectors like ticks, fleas, and lice.

Fever
Fever-beaver
Many of the Rickettsial diseases have a classic triad of headache, fever, and a rash.

Headache
Head-egg lump
Many of the Rickettsial diseases have a classic triad of headache, fever, and a rash.

Sign up for FREE at picmonic.com

Rash

Dermatologist examining Rash

Many of the Rickettsial diseases have a classic triad of headache, fever, and a rash. The rash is often caused by vasculitis.

Weil-Felix reaction

Whale

A Weil-Felix test is an agglutination test used for the identification of rickettsial infections. When patient serum is mixed with Proteus antigens, anti rickettsial antibodies cross-react to Proteus O antigens causing agglutination. It is important to note that Q fever has a negative Weil-Felix reaction.

Treatment doxycycline

Dachshund-cycling

Doxycycline is a tetracycline antibiotic that is effective against Rickettsial organisms.

Sign up for FREE at picmonic.com