QFS/Post Q Fever Fatigue Syndrome

More frequent than expected

After the acute phase of Q fever persisting clinical symptoms occur in up to 40 % of cases. Patients also suffer from impairments of quality of life, lasting 12-24 months.

Most frequent symptoms:

- Fatigue
- Significant restrictions in carrying out everyday activities of daily living
- Lack of concentration
- Muscle aches
- Night sweats
- Also, the previous level of performance and working is not achieved after one year

Therapeutically, this symptom complex is a challenge, as the illness cannot be influenced by administration of antibiotics. Therefore, psychosomatic and behavioural approaches to treat this condition are recommended.

Clinical Relevance

After acute Q fever infection there is a relevant risk for medium- to long-term impairments of quality of live and performance.

According to § 7 Sec. 1 No 10 of the German Infection Protection Act direct or indirect detection of *C. burnetii* has to be reported by name to the health authorities, if there is an indication of an acute infection.

Further Information

Q-GAPS

Q-Fever **G**erm**A**n Interdisciplinary **P**rogram for Re-**S**earch

Coordinator: Prof. Dr. Anja Lührmann,
Anja.Luehrmann@uk-erlangen.de

Homepage: www.q-gaps.de
Email: info@q-gaps.de

Contact Q Fever Infections

Public Health Department of Baden-Wuerttemberg
National Reference Laboratory for Q Fever, Stuttgart

Prof. Dr. Silke Fischer,
Silke.Fischer@rps.bwl.de

Bundeswehr Medical Academy
Bundeswehr Joint Support Science
Dpt. MI2 / Surveillance / MN FHP Nexus, Munich

PD Dr. Dimitrios Frangoulidis,
DimitriosFrangoulidis@Bundeswehr.org

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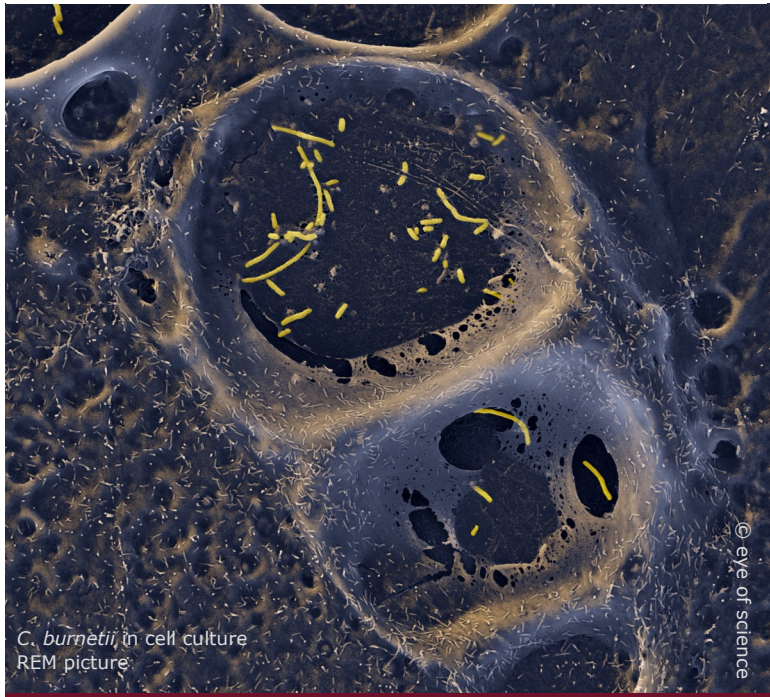
Q Fever

More Than A Flu



C. burnetii in cell culture
REM picture

Information on Q Fever in Humans

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What is Q Fever?

Q fever is an endemic zoonotic disease in Germany and worldwide, caused by the bacterium *Coxiella (C.) burnetii*. Humans get infected mainly aerogenously by inhaling infectious material shed by animals (e.g. sheep, goats, cattle) or significantly less via contaminated food products (unpasteurized milk/milk products).
Q fever can be easily mixed up with flu due to the unspecific symptoms.

What is Q-GAPS?

Q-GAPS (**Q**-Fever **G**erm**A**n Interdisciplinary **P**rogram for Re**S**earch) is an interdisciplinary and unique consortium from different disciplines (medical doctors, veterinarians and biologists) with extraordinary expertise, competence and knowhow when it comes to the Q fever pathogen *C. burnetii* which will implement the "One Health" approach for Q fever.

Aim: Q-GAPS has committed itself to investigate unsolved questions relating to the epidemiology, immunology, pathogenesis, surveillance and control of *Coxiella burnetii* and to provide a knowledge network comprising all aspects of infection with *C. burnetii*.
With this flyer, Q-GAPS wishes to establish a general point of reference for medical doctors.

Q Fever Diagnostics

Serological detection of specific antibodies against both phase variants of *C. burnetii* by means of an immunofluorescence test (IFT) or ELISA is the gold standard in humans. An acute infection can be distinguished from a chronic one due to the height of antibody titre (IgG and IgM, phase I and II). However, reactive results in ELISA should be principally confirmed by IFT. In addition, PCR should be performed to detect specific Coxiella DNA. PCR has proved effective, as specific antibodies cannot be detected when there is an acute infection, especially in the early phase of the disease, and the infection could be undetected or is not diagnosed until a second serum is tested.

Acute Q Fever

Clinics in Humans

After an incubation period of 1 – 3 weeks about 40 % of infected people show clinical symptoms, with the infection being asymptomatic in all other cases. Clinical symptoms can be flu-like symptoms like heavy retroorbital headache, fever, weariness, aching limbs and chills.

Manifestations in organs such as atypical pneumonia, granulomatous hepatitis can be observed in about 10 % of cases. The infection very rarely results in a myocarditis, pericarditis or meningoencephalitis.

An acute infection and chronic Q fever can increase the risk of still birth (mostly when there is an initial infection in the first trimester of pregnancy), a premature birth, placentitis or low birth weight. A transmission of the pathogen to the foetus in the womb resulting in long term effects for the child has not been described, as yet.

Therapy

First line medication: doxycycline
(Dosage: 2 x 100 mg/day, 14 days).

In case of pregnancy: cotrimoxazol
(Dosage: 800mg/160mg, 2x daily).

Alternative antibiotics: macrolids
(azithromycin, clarithromycin) or
fluoroquinolones.

A serologial follow-up of patients with acute Q fever within a year to exclude chronification is recommended.

A *C. burnetii* infection has to be excluded in the case of all culture negative endocarditis, aortic / illiacal changes and before cardiac surgeries.

Chronic Q Fever

Diagnosed too rarely and too late

An acute *C. burnetii* infection leads to chronical Q fever in 1 % of cases (after more than 6 months of persistent infection), and frequently manifests clinically in the form of an endocarditis. Less often, for example granulomatous hepatitis or osteomyelitis occurs. Frequently these disorders and symptoms occur many years later after a symptom-free interval. Chronical disease requires extended therapy (several years) and mortality is associated with a high complication rate of up to 40 % when not treated.

Risk groups

Patients with pre-existing cardiovascular diseases or severe immune suppression show a significantly increased risk for a transition to chronic *C. burnetii* infection.

Thus, according to a study from the Netherlands cases with aortic/illiacal changes and other vascular endothelium changes in combination with acute Q fever show a 30 % risk of developing chronical Q fever.

Recommendations

After acute Q fever a 12-months antibiotic prophylaxis with doxycycline in combination with hydroxychloroquine can prevent the development of chronification in the risk groups mentioned above.

Regular (at least annual) follow-ups in patients of risk groups with high phase I specific IgG antibodies are recommended.

When chronification (chronic Q fever) has already occurred a combined therapy of at least 18-24 months with e.g. doxycycline and hydroxychloroquine is carried out.

In the case of chronic Q fever regular follow-ups are also required.

TIP Further information on Q fever:
www.q-gaps.de or info@q-gaps.de