

## Betalaktame und Infektion mit Borrelien

**Ceftriaxon Indikation:** Bakterielle Infektionen durch Cephalosporin-empfindliche Krankheitserreger der oberen und unteren Atemwege, im HNO-Bereich, der ableitenden Harnwege, der Haut und Weichteilgewebe, einschließlich Wundinfektionen, der Geschlechtsorgane, einschließlich Gonorrhoe, des Bauchraumes, der Knochen und Gelenke. Sepsis. Meningitis. **Lyme Borreliose.**

**Inkompatibilität mit:** Calciumhaltigen Lösungen, anderen antimikrobiellen Arzneistoffen, Amsacrin, Vancomycin, Fluconazol.

**Komplikationen:** u.a. Präzipitation eines Calciumsalzes von Ceftriaxon in der Gallenblase.

Roche Pharma AG; Wichtige Sicherheitsinformation: Mögliche Wechselwirkung zwischen Accu-Chek® Compact. Teststreifen und Accu-Chek® Mobile Tests mit dem Antibiotikum Ceftriaxon, Dtsch Arztebl 2014; 111(17): A-749

**Amoxicillin Indikation:** Bakterielle Infektionen durch Beta-Laktamase-negative, Amoxicillin-empfindliche Gram-positive und Gram-negative Krankheitserreger im HNO-Bereich, der oberen Atemwege, der Nieren und ableitenden Harnwege, der Geschlechtsorgane (einschl. Gonorrhoe), der Gallenwege, des Magen-Darm-Trakts(einschließlich der gesicherten Helicobacter pylori-Infektion in Form einer Tripeltherapie), der Haut und der Weichteile. Endocarditis-Prophylaxe. Typhus abdominalis (einschließlich der Sanierung von Dauerausscheidern), immer dann, wenn Fluorochinolone nicht anwendbar sind. Listeriose. Osteitis, Osteomyelitis [hier die Therapie durch parenterale Gabe einleiten]. Beipackzettel beachten!

**Betalaktam-Antibiotika sind bei intakter Blut-Hirnschranke nicht liquor-gängig.** <http://www.xerlebnishaft.de/escape.pdf>. Betalaktam-Antibiotika jagen die bakteriellen Phänotypen unmittelbar in die genotypischen Stressvarianten, in bakterielle Dauerformen <http://www.erlebnishaft.de/kommentstressvar1.pdf> <http://www.erlebnishaft.de/kommentstressvar2.pdf>, die für Krankheits-Rückfälle verantwortlich gemacht werden. **Bei chronischer Lyme-Borreliose und Lyme Neuroborreliose daher Betalaktam - Antibiotika nicht alleine anwenden, sondern immer kombiniert mit anderen antibiotisch wirksamen Substanzen**, z.B. mit Tetracyclinen evtl. zeitlich versetzt, und/oder Makroliden, mit Nitroimidazolen (Metronidazol, Tinidazol [nur über 10 oder 14 Tage]), mit Lysosomotropika (Hydroxichloroquin, Artemisinin), bei entsprechenden Ko-Infektionen auch mit Ansamycinen (Rifampicin).

**Borrelien bilden Betalaktamasen.** <http://www.xerlebnishaft.de/escape.pdf>

**Ceftriaxone Indications:** Bacterial infections caused by cephalosporin-sensitive pathogens of the upper and lower respiratory tract, in the ENT area, urinary tract, skin and soft tissues, including wound infections, the sexual organs, including gonorrhea, the abdomen, bones and joints. Sepsis. Meningitis. Lyme borreliosis.

**Incompatibility with:** calcium-containing solutions, other antimicrobial drugs, amsacrine, vancomycin, fluconazole.

**Complications:** inter alia Precipitation of ceftriaxone calcium salt in the gallbladder.

Note the package insert!

**Amoxicillin Indications:** Bacterial infections caused by beta-lactamase-negative amoxicillin-susceptible Gram-positive and Gram-negative pathogens in the ENT area, upper respiratory tract, the kidneys and urinary tract, the reproductive system (including gonorrhea), biliary tract, the gastrointestinal tract (including the secured Helicobacter pylori infection in the form of a triple therapy), skin and soft tissues. Endocarditis prophylaxis. Typhoid (including the rehabilitation of permanent shedders), whenever Fluorochinolone are not applicable. Listeriosis. Osteitis, osteomyelitis [the therapy initiated here by parenteral administration]. Note the package insert!

**Beta-lactam agents do not go into the cerebrospinal fluid in case of an intact blood-brain barrier** <http://www.xerlebnishaft.de/escape.pdf>. Beta-lactam agents are chasing the bacterial phenotypes directly in the stress genotypic variants in bacterial life forms <http://www.erlebnishaft.de/kommentstressvar1.pdf> <http://www.erlebnishaft.de/kommentstressvar2.pdf>, which are blamed for the disease relapses. **In chronic Lyme disease and Lyme neuroborreliosis beta lactam therefore - antibiotics do not apply alone, but always in combination with other antibiotic substances**, eg. with tetracycline evt. Staggered in time, and / or macrolide, with nitroimidazoles (metronidazole, tinidazole [only about 10 or 14 days]), with Lysosomotropika (Hydroxichloroquin, artemisinin), in case of corresponding co-infections with ansamycins (rifampin).

**Borrelia constitute beta-lactamases.** [http://www.xerlebnishaft.de/escape\\_eng.pdf](http://www.xerlebnishaft.de/escape_eng.pdf)

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„These results may explain the in vitro activity of  $\beta$ -lactamase inhibitors in general and suggest a utility for these compounds when examining PBPs [penicillin-binding proteins] with hydrolysing activity and/or organisms with  $\beta$ -lactamases.“

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„**The 2 existing placebo-controlled trials do not support the use of long-term antibiotics for the treatment of chronic subjective symptoms attributable to Lyme disease**“ **[Ceftriaxone alone]** „**Unfortunately, prospective studies with other therapies have not been performed for patients with persisting symptoms after Lyme disease**“.

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« **Conclusion: Antibiotics have varying effects on the different morphological forms of *B. burgdorferi*. Persistence of viable organisms in round body forms and biofilm-like colonies may explain treatment failure and persistent symptoms following antibiotic therapy of Lyme disease.** »

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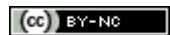
“**On the basis of this analysis [Ceftriaxone alone over duration time of 31 or 50 months], the conclusion that there is a meaningful clinical benefit to be gained from retreatment of such patients with parenteral antibiotic therapy cannot be justified.**”

Feng J, Auwaerter PG, Zhang Y (2015) **Drug Combinations against *Borrelia burgdorferi* Persists In Vitro: Eradication Achieved by Using Daptomycin, Cefoperazone and Doxycycline.** *PLoSone.* 0117207, 1-15 <http://www.ncbi.nlm.nih.gov/pubmed/25806811>

“**Daptomycin plus doxycycline and cefoperazone eradicated the most resistant microcolony form of *B. burgdorferi* persists and did not yield viable spirochetes upon subculturing, suggesting durable killing that was not achieved by any other two or three drug combinations.**”

➔ **Antibiotika Langzeit-Therapie** [http://www.kabilahsystems.de/antibiotika\\_langzeit.pdf](http://www.kabilahsystems.de/antibiotika_langzeit.pdf)

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