

Lyme Antibiotic, Actos & Cholestyramine Treatment

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When Lyme or tick-borne disease is indicated in Dr. Shoemaker's opinion, the following protocol is used. First, rule out other biotoxin exposures, such as indoor air or outdoor fungal mycotoxins, *Ciguatoxins* (seafood), *Brevetoxins* (marine red tides), *Pfiesteria* toxins (estuaries), cyanobacteria toxins (fresh water), or Brown Recluse or another poisonous spider bite, by taking a thorough neurotoxic history. Symptoms from these toxic exposures can look like Lyme but won't get better with antibiotics. Second, verify as well as possible that the patient has had a tick bite or a good potential for such. Question the patient about ticks and rashes, and obtain laboratory tests for exposure to *Borrelia*, *Ehrlichia*, *Babesia* or other potentially co-infecting organisms if possible, remembering that those tests may have a high false-negative rate.

Doxycycline, 100 mg, 2 x day for 3 weeks [If allergic, Amoxicillin, 250 mg, 3 x day, 3 weeks; or Cefuroxime axetil (Ceftin), 250 mg, 2 x day, 3 weeks]. Note : the doses used here are quite different than what you may read elsewhere.

Then, **Actos** (pioglitazone; if not available take Avandia, 4 mg x 2/day) to upregulate peroxisome proliferator activated receptor gamma (PPAR γ) which in turn downregulates production of pro-inflammatory cytokines, such as tumor necrosis factor alpha (TNF α), taken once daily with or without food for 5 days prior to beginning cholestyramine (CSM). **See Actos instructions in treatment protocol available on website:** 1) Protocol for Prevention of Intensification Reaction (Herxheimer-like reaction) by Actos in Chronic Lyme Patients Beginning Cholestyramine; 2) Actos information sheet (soon available on website).

Begin cholestyramine (**CSM**) on day 6 of Actos, and continue **CSM** for 3 weeks; continue **Actos** for 4 more days (total of 10 days Actos). **See CSM instructions in treatment protocol available on website:** 1) What to expect from cholestyramine; 2) Information on cholestyramine; 3) cholestyramine protocol.

Physician evaluation after 3 weeks of **CSM**, Note: most patients are seen frequently during the first several weeks of Actos/CSM protocol; this MD review is the minimum. Don't skip getting a VCS test done! It is your "compass" to find your way home.

If vision and symptom are improving as Lyme patients normally will, continue **CSM** alone until symptoms abate or reach a plateau.

If no improvement or worse, consider alternative diagnoses or complications of Lyme beyond neurotoxins alone. Discontinue **CSM**, and:

A. Get deep nasal (body, not vestibule) culture for Coagulase Negative Staphylococcus (CNS), and blood tests for Leptin and alpha-Melanocyte-Stimulating Hormone (MSH); the culture must be grown for at least 5 days; don't let the lab say "normal flora" as CNS is still regarded as "benign" by most infectious disease physicians. Make sure the lab runs the Leptin and MSH assays properly - special blood drawing tubes are necessary and aren't a "routine" test for most labs.

B. While waiting for Part A test results, consider:

- i.v. ceftriaxone (**Rocephin**), 2 gm, 1 x day (PICC line catheter), 28 days.

If i.v. Rocephin not available:

- **Biaxin** (clarithromycin), 500 mg, 2 x day, 4 weeks; or Roxithromycin (foreign use) or other macrolide antibiotic.

After completing antibiotic regime, **CSM** per protocol for 3 weeks.

When test results are available, if culture for CNS (produces delta toxin) is positive, leptin is high and MSH is low, begin:

- **Rifampin**, 2-300 tablets mg with food in morning, 4 weeks (it turns saliva, tears and other secretions red - is not blood!), plus;

- sulfamethoxazole-trimethoprim (**Bactrim DS** - make sure you are not allergic to sulfur), 1 tablet, 2 x day, 4 weeks, plus;

- **Muciprocin (Bactroban cream)**, apply to swab at one end of Q-tip, coat front and deep nostril thoroughly, repeat with other swab or other end of Q-tip in the other nostril, 3 x day, 4 weeks.

- Take **Actos** per protocol if an intensification reaction occurs, and it often will, making some patients think that their problem is still Lyme. (We think that the cytokines made in response to the neurotoxins of Lyme or the antibiotics used to treat Lyme may alter the normal defenses of the mucus membranes of the nose, permitting a slow-growing, opportunistic organism, resistant to nearly all commonly used antibiotic, like CNS, possibly growing with an unusual fungus, to take over a "niche" in the nose.)

[Treatment for CNS is evolving; we are conducting studies. You may wish to sign up on the website for a phone consultation with Dr. Shoemaker, particularly if you have the MSH problem (not uncommon) which indicates a hypothalamic abnormality.]

After completing antibiotic regime, **CSM** per protocol for 3 weeks.

If still ill, and symptoms include sweats, shortness of breath and cough, and unexplained hematuria, without red cells in urine, get polymerase chain reaction (PCR) test for Babesia (tick-borne protozoan). If positive, begin:

- Atovaquone (**Mepron**), 750 mg (1 teaspoon), with food, 2 x day, 6 weeks (2 bottles); continue CSM.

After completing antibiotic regime, **CSM** per protocol for 3 weeks.

Source: VCS Visual Contrast Sensitivity Test Centre