CNPBC General Guidelines for Authorized Parenteral Antibiotic Treatment for Lyme Disease

General Approach to Parenteral Antibiotic Treatment for Lyme Disease Using Ceftriaxone, Clindamycin,or Bicillin

Appropriate informed consent should be obtained regarding:

- controversial aspect of Lyme disease diagnosis and treatment (with reference to opposing views from the Infectious Disease Society of America and International Lyme and Associated Diseases Organization)

- specific risks of long-term antibiotic therapy, including risk of serious and fatal C difficile infection, pseudocholelithiasis (from ceftriaxone), and drug specific adverse and allergic effects

- specific risks of intravenous antibiotic therapy, including anaphylaxis, venous access complications, phlebitis / thrombosis; and specific risks of intramuscular Bicillin therapy, including pain, and risks specific to intramuscular injections

Rocephin (ceftriaxone) is the most commonly used intravenous agent for treatment of serious chronic Lyme disease. It may be clearly indicated for use in serious neuroborreliosis cases particularly if a reasonable trial of intensive oral treatment (naturopathic or conventional antibiotic) has been shown to be insufficient or the gravity of the clinical situation justifies resorting to intravenous therapy sooner rather than later. For simple arthritis, musculoskeletal or cardiac involvement 30-60 days of treatment may suffice. For serious neurologic (e.g. encephalitis/encephalopathy, meningoencephalitis, myelitis/myelopathy) and/or neuropsychiatric cases treatment may need to be prolonged. In such cases duration of treatment should be based upon clinical response not on an arbitrarily pre-conceived number of days, weeks or months.

Clindamycin has been used by some clinicians for Lyme disease, though published data is lacking.

Initial dose of an intravenous antibiotic should be administered slowly and directly observed by the naturopathic physician with availability of emergency resuscitative drugs and equipment in the event of serious allergic reaction. The patient should be provided with an Epi-pen kit and instructed in its use if required if a serious allergic reaction subsequently develops and that further care at an emergency room should be sought directly following its use. If intravenous agents need to be changed, again, first dosage should be physician observed in a controlled setting.

Surveillance labs should be obtained at the discretion of the naturopathic physician, but should be at least every 2 weeks to monthly and earlier at the start of therapy. This would include labs specific for monitoring of adverse effects specific to the drug used, and usually includes liver enzymes, creatinine, CK, and CBC.

Some clinicians are using ursodiol at the outset of treatment with ceftriaxone in an effort to avert development of pseudocholelithiasis. No published studies are yet available to support this practice.

If significant diarrhea ensues it may be necessary to suspend antibiotic treatment and investigate the cause of the diarrhea, for example with stool studies for enteric pathogens and/or *C. difficile* toxins A & B. Take appropriate therapeutic measures if necessary.

Ceftriaxone, when given as a short peripheral infusion, should be reconstituted as per the product monograph and diluted into normal saline or 5% dextrose. It can be given over 20-30 minutes. It must NEVER be combined with any calcium containing solutions, such as lactated ringers, because of reported fatal precipitates in neonates.

Clindamycin is usually given as an IV infusion at a rate not faster than 30 mg per minute. It is diluted into 0.9% saline or 5% dextrose. Specifically, it is UNSTABLE when mixed with vitamins.

Bicillin-LA can be a very painful intramuscular injection, and the patient should be warned of this in advance. It is only suitable for DEEP intramuscular administration. Further, injection near a nerve may result in permanent nerve damage. It is NEVER to be used intravenously.

If the naturopathic physician and patient agree upon pulsed antibiotic therapy, as some clinicians have been using, then a schedule of 4-5 days on, with 2-3 days off may be appropriate. In such cases if a short peripheral line is left in place with a heparin-lock, it should be removed at the end of 4-5 days and then a new line started the following week. In such cases, a SASH protocol (saline flush, admixed drug, saline flush, heparin-lock) should be followed. This involves a 10 ml saline flush to clear the line, administration of the antibiotic in normal saline, followed by a second 10 ml saline flush, and then 5 ml of a heparin 100 units/ml to maintain patency.

Once the decision has been made to embark on intravenous antibiotic therapy it can be difficult to decide on what is the end-point for treatment. These are meant to be general guidelines, and in way are meant to act as a disease-specific protocol that supersedes the naturopathic physician's assessment of the progress or lack of progress of an individual patient. When maximal progress has been made treatment may be discontinued. If indicated, there may be consideration whether to step down onto some type of oral anti-microbial treatment. Continued careful clinical observation and study of the patient following application of intravenous antibiotic therapy is often necessary to assess status and monitor against relapse of illness.

References:

Adapted heavily from Kenneth Liegner, MD's method of intravenous antibiotic administration in Lyme disease.

Roche Canada monograph for ceftriaxone, revised February 7, 2008

Sandoz Canada monograph for clindamycin, revised May 31, 2012.

Pfizer Canada monograph for bicillin-LA, July 25, 2011.

Stricker et al. Safety of intravenous antibiotic therapy in patients referred for treatment of neurologic Lyme disease. MINERVA MED 2010;101:1-7

BCNA Advancing Natural Medicine 9 conference, lecture by Ernie Murakami, MD.

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