Danbury Hospital
Department of Pathology & Laboratory Medicine
Technically Speaking

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Review of Lyme disease testing at Danbury Hospital Laboratory

Summary of CDC statement and guidelines
(copied from their web site at www.cdc.gov/ncidod/diseases/submenus/sub_lyme.htm):

The diagnosis of Lyme disease is based primarily on clinical findings, and it is often appropriate to treat patients with early disease solely on the basis of objective signs and a known exposure. Serologic testing may, however, provide valuable supportive diagnostic information in patients with endemic exposure and objective clinical findings that suggest later stage disseminated Lyme disease."

When serologic testing is indicated, CDC recommends testing initially with a sensitive first test, either an enzyme-linked immunosorbent assay (ELISA) or an indirect fluorescent antibody (IFA) test, followed by testing with the more specific Western immunoblot (WB) test to corroborate equivocal or positive results obtained with the first test.

Although antibiotic treatment in early localized disease may blunt or abrogate the antibody response, patients with early disseminated or late-stage disease usually have strong serological reactivity and demonstrate expanded WB immunoglobulin G (IgG) banding patterns to diagnostic *B. Burgdorferi* antigens.

Antibodies often persist for months or years following successfully treated or untreated infection. Thus, seroreactivity alone cannot be used as a marker of active disease.
Neither positive serologic test results nor a history of previous Lyme disease assures that an individual has protective immunity. Repeated infection with *B. Burgdorferi* has been documented.
B. Burgdorferi can be cultured from 80% or more of biopsy specimens taken from early erythema migrans lesions. However, the diagnostic usefulness of this procedure is limited because of the need for a special bacteriologic medium (modified Barbour-Stoenner-Kelly medium) and protracted observation of cultures.

Polymerase chain reaction (PCR) has been used to amplify genomic DNA of *B. Burgdorferi* in skin, blood, cerobro-spinal fluid, and synovial fluid, but PCR has not been standardized for routine diagnosis of Lyme disease.

Lyme Testing at DH laboratory
The immunology section of the laboratory utilizes an automated enzyme - linked fluorescent assay (ELFA) for serology testing. In conjunction with the CDC guidelines, orderable procedures are available that will allow the reflex of a positive or equivocal Lyme serology test result to western blot testing.

Stat testing is available Monday through Friday from 8am to 4 pm. Expected turn around time is approximately 45 minutes from the time of arrival of the specimen in the laboratory section.

Western blot analysis is performed once a week; expected turn around time is 7 days after receipt of the specimen. This test is performed more frequently during the months where exposure to Lyme disease is more common.

Orderable tests:
Lyme serology only
Western blot only
Lyme serology reflex to western blot if positive or equivocal

Lyme disease testing at Danbury Hospital (con't)

Comprehensive evaluation for
B. Burgdorferi antigens in CSF is offered in association with a reference laboratory and PCR analysis of body fluids is also available. Reporting formats for these tests have recently been updated to facilitate comprehension and interpretation.

PCR development for in-house implementation is in the planning stages in the DH molecular diagnostic section of the laboratory.

For more information regarding testing, specimen requirements and test results please contact the Immunology section of the laboratory at 203-797-7390. For clinical questions or consultations, please call 203-797-7527.

ATTENTION TO USERS:

Effective 1-1-02, Medicare eliminated the Arthritis Panel from their list of approved panels. Tests formerly found in this panel must be ordered separately for Medicare reimbursement. This panel will also be deleted from the Danbury Hospital requisition.

REMINDER:

Effective February 4, 2002, hours of operation changed in the following satellites:
Newtown: 7:30 am – 1:00 pm, M-F
Southbury: 7:30 am – 1:00 pm, M-F
Ridgefield: 7:30 am – 1:00 pm, M-F.
No Saturday hours in Ridgefield.

Hours of operation are unchanged at the Germantown and Brookfield sites.

SWEAT TESTS: TO SCHEDULE TESTING

To schedule a sweat test for the diagnosis of cystic fibrosis, please call the Clinical Chemistry section of the laboratory at (203) 797-7337. Sweat tests are scheduled for Tuesday mornings at 9am, 10am or 11am.

NEW SAFETY DEVICE IN USE AT DANBURY HOSPITAL

In an ongoing effort to provide the safest equipment for our staff and clients, the Danbury Hospital Department of Laboratory Medicine is introducing the use of the Bio-Plexus Punctur-Guard winged sets (butterflies) for blood collection. These devices are used to facilitate the collection of blood specimens from patients with hard-to-draw veins. The new devices are available in 21gauge and 23 gauge sizes only and will replace the current product as soon as staff and client training is completed.

Training for the use of the Bio-Plexus Punctur-Guard winged sets will take place at the hospital on Tuesday, February 19, 2001, on Wednesday, February 20, 2001 and on Friday, February 22, 2001. Sessions will begin at the top of each hour beginning at 7am. The last session of each day will begin at 4pm.

Clients: to sign up for sessions or to inquire after specific locations for a particular session, please call the Laboratory Client Service Representative at (203) 797-7800. **Walk-ins are welcome**.