



MLS: Laboratory Update

Record Numbers of Minnesotans Sick from Tick-Borne Diseases in 2010

May 9, 2011

Purpose of this Message: The Minnesota Department of Health (MDH) issued a press release May 6, 2011 reporting record numbers of tick-borne disease cases in Minnesota in 2010, with a doubling of anaplasmosis and babesiosis case numbers, increase in Lyme disease, and continued risk for other emerging tick-borne diseases. This message may be found in pdf printable form at:

<http://www.health.state.mn.us/divs/phl/mls/alerts.html#2011>

MDH urges healthcare providers to note the following:

BABESIOSIS

- Babesiosis is a malaria-like illness caused by red blood cell parasites (*Babesia* spp.). It is carried by the same ticks that carry Lyme disease.
- MDH recommends at least 2 of the following 3 lab tests: PCR, peripheral blood smear, or serology.
- Recommended treatment is atovaquone + azithromycin (mild to moderate cases) or clindamycin + quinine (severe cases) x 7-10 days. Repeated treatment and monitoring of parasitemia levels may be necessary for patients with certain forms of immune compromise.
- Transfusion-transmitted babesiosis can occur and should be considered in transfusion recipients who develop anemia, thrombocytopenia, or a febrile illness after receiving cellular blood products. Suspect cases should be promptly reported to associated blood banks and MDH.

LYME DISEASE

- The pathognomonic erythema migrans (EM) rash is present in the majority (but not all) cases of Lyme disease. It is not always “bull’s-eye” in appearance but does expand in size over time. If a patient has an EM highly suggestive of Lyme disease and recent symptom onset (<2-3 weeks), *B. burgdorferi* antibody tests are not recommended because of low sensitivity at this stage of infection.
- Seroconversion to IgG antibodies on Western blot is expected for patients with symptoms lasting > 1 month. For patients who have had signs and symptoms for >1 month or who do not have an EM rash, diagnosis should be based on laboratory tests in addition to symptomatology.
- Long-term or repeated antibiotics for the treatment of “chronic” Lyme disease is not necessary, safe, or recommended. Evidence does not demonstrate persistence of viable *B. burgdorferi* after treatment with the correct antibiotic for the indicated treatment duration (2-4 weeks).
<http://www.idsociety.org/Content.aspx?id=9088>
- Persistent symptoms following proper treatment may be due to lingering inflammatory processes, an unrecognized tick-borne co-infection, or an unrelated process.

HUMAN ANAPLASMOSIS / EHRLICHIOSIS

- These disease names are often used interchangeably, which is incorrect. Human anaplasmosis (formerly “human granulocytic ehrlichiosis”; etiologic agent *Anaplasma phagocytophilum*) is endemic to Minnesota and is carried by *Ixodes scapularis* ticks (Lyme disease vector). In contrast, human ehrlichiosis caused by *Ehrlichia chaffeensis* is endemic to southern states and carried by Lone Star ticks. However, another newly-identified form of ehrlichiosis is caused by “*Ehrlichia muris*-like agent,” which might be transmitted by *I. scapularis* ticks.
- PCR tests provide the best sensitivity and specificity.

- A peripheral blood smear for *Anaplasma* can also be performed, but sensitivity can be low.
- If serologic tests are ordered, please make sure to include both *Anaplasma* and *Ehrlichia*, or also order a PCR test. *Anaplasma* and *Ehrlichia* can be cross-reactive on serologic assays.
- Transfusion-transmitted anaplasmosis cases have occurred in Minnesota and should be considered in patients who develop a fever and thrombocytopenia post-transfusion. Contact the associated blood bank and MDH immediately about any suspect transfusion cases.

ROCKY MOUNTAIN SPOTTED FEVER (RMSF)

- Although RMSF is considered rare in Minnesota, MDH receives a few reports every year in patients with no travel history. RMSF is carried by *Dermacentor* ticks, which are common in wooded or brushy areas throughout the state. A Dakota County child who contracted the infection in Minnesota died of RMSF in 2009.
- Signs of RMSF can include fever, maculopapular or petechial rash, and thrombocytopenia.
- To prevent severe disease, tetracycline treatment should be initiated for any suspect cases while test results are pending, even for children.

POWASSAN

- Powassan virus (POWV), a tick-borne flavivirus related to West Nile virus, can cause encephalitis or meningitis. Six cases have been identified in Minnesota residents from 2008-2010. One strain of POWV is transmitted by *I. scapularis* ticks (which also carry Lyme disease).
- Serum or CSF specimens from patients with central nervous system disease can be submitted directly to the MDH Public Health Laboratory for arboviral disease testing, including POWV. Please call MDH tick-borne disease epidemiology staff prior to submitting specimens (651-201-5414), for clinical consultation. At this time, no commercial laboratories offer serologic testing for POWV.

REPORTABILITY

- All tick-borne diseases are reportable to MDH; reports need to include demographic, clinical, and laboratory information. Please contact MDH tick-borne disease epidemiology staff at 651-201-5414 for associated forms.

Additional Information

MDH: Tick-borne disease epidemiology 651-201-5414 or
<http://www.health.state.mn.us/divs/idepc/dtopics/tickborne/hcp.html>

Thank you,

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This is an update from the Minnesota Department of Health – Public Health Laboratory (MDH-PHL) and the Minnesota Laboratory System (MLS). This message is being sent to MLS laboratory contacts serving Minnesota residents. You are not required to reply to this message.

****Please forward this to all appropriate personnel within your institution and Health System****