

Characteristics of Tickborne Diseases in Wisconsin



WISCONSIN DIVISION OF PUBLIC HEALTH
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Disease	Etiologic agent	Reservoir	Vector	Incubation range	Clinical Symptoms	Available tests	Treatment (IDSA guidelines £)
Anaplasmosis (formerly known as HGE)	<i>Anaplasma phagocytophilum</i>	Mammals- (white footed-mouse, deer)	<i>Ixodes</i> sp. tick (blacklegged/deer tick)	Usually 7-14 days	Headache, fever, chills, muscle aches, fatigue, nausea, cough, confusion, rash (rare), thrombocytopenia, leukopenia, elevated liver enzymes	IFA IgG/IgM, PCR, smear culture, IHC	Antibiotics (doxycycline) usually 10-14 days
Babesiosis	Typically <i>Babesia microti</i> (parasitic)	Small mammals- (white footed-mouse)	<i>Ixodes</i> sp. tick (blacklegged/deer tick)	Typically 7-21 days	Fever, chills, sweats, headache, body aches, loss of appetite, involuntary weight loss, nausea, fatigue, anemia, thrombocytopenia	Blood smear, PCR, IFA	Combination of two medications: atovaquone + azithromycin, or clindamycin + quinine (at least 7-10 days)
Ehrlichiosis (formerly known as HME)	<i>Ehrlichia chaffeensis</i> , novel <i>Ehrlichia muris</i> -like (EML, not have been named)	Mammals- (white footed-mouse, deer)	<i>Amblyoma</i> (lone start tick) (<i>E. chaffeensis</i> -lone star tick)* (EML- blacklegged tick)	Usually 7-14 days	Headache, fever, chills, muscle aches, fatigue, nausea, vomiting, cough, joint pain, confusion, occasional rash, thrombocytopenia, leukopenia, elevated liver enzymes	IFA IgG/IgM, PCR, smear culture, IHC (PCR is the only commercial test available for EML)	Antibiotics (doxycycline) usually 10-14 days
Lyme	<i>Borrelia burgdorferi</i> novel <i>Borrelia</i> sp. (not have been named)	Mammals- (white footed-mouse, deer)	<i>Ixodes</i> sp. tick (blacklegged/deer tick)	Usually within 3-30 days	Expanding erythma migrans (EM) rash, fatigue, chills, fever, headache, muscle and joint aches, arthritis, nervous system (facial palsy, radiculoneuropathy, lymphocytic meningitis), memory problems, irregular heart rhythm (rare)	EIA/IFA and WB**, PCR, culture	Oral antibiotics (doxycycline, amoxicillin, cefuroxime axetil) usually 14 days
Powassan	Powassan virus (arbovirus group)	Small mammals- (woodchucks, groundhogs, white-footed mouse, chipmunks, and squirrels)	<i>Ixodes</i> sp. tick (blacklegged/deer tick)	Usually 7-30 days	fever, muscle weakness, headache, nausea, vomiting, stiff neck, blurry vision, confusion, encephalitis, meningitis, seizures, gait unbalance, paralysis, respiratory distress, coma	MAC-ELISA, PRNT (no commercial test, available only at CDC)	None (supportive treatment)
Spotted fever group rickettsia, including Rocky mountain spotted fever (RMSF)	<i>Rickettsia rickettsii</i> (reported cases usually associated with travel to an endemic state)	Rodents	<i>Dermacentor</i> sp. tick (American dog tick)	Usually 2-14 days	Fever, rash, headache, nausea, vomiting, abdominal and muscle pain, lack of appetite, conjunctival injection (red eyes)	IFA, IHC, PCR	Antibiotics (doxycycline) usually 10-14 days

£ Infectious Diseases Society of America (IDSA)

* Uncertain if lone star tick ecology is established in WI

** Two-step or two-tier testing should be performed together, see CDC recommendation

<http://www.cdc.gov/lyme/diagnosis/treatment/LabTest/>