

Pathology and Laboratory Medicine Memorandum

To: Nova Scotia Physicians and Health Service Directors

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Subject: **Addition of Anaplasma PCR testing to Lyme Serology requests.**

In response to increased numbers of *Anaplasma phagocytophilum* infections detected in Nova Scotia, the QEII laboratory has added Anaplasma specific PCR to any Lyme serology request as part of a strategy to increase the diagnosis of this tick-borne infection. Any positive results that are detected will be reported to the ordering physician and copied to Public Health.

What is anaplasmosis? Anaplasmosis or Human Granulocytic Anaplasmosis (HGA) is an infection caused by the bacterium *Anaplasma phagocytophilum* which is transmitted by the same tick that transmits *Borrelia burgdorferi*, the cause of Lyme disease, and *Babesia* spp., the cause of babesiosis.

How common is anaplasmosis? Although sporadic cases have been identified in the past few years, there have been 61 cases so far since the start of this tick season.

What are the symptoms of anaplasmosis? The incubation period following a tick bite ranges from 5-21 days, but most patients will present within 7-14 days. The most common symptoms are acute onset of fever, with one or more of malaise, arthralgias, myalgias, and headache, and occasionally GI complaints. Patients often have mildly elevated transaminases and can have an abnormal CBC with thrombocytopenia, leukopenia, neutropenia, or anemia. Although the clinical syndrome can be non-specific, these laboratory abnormalities would be uncommon with Lyme disease and their presence suggests anaplasmosis, with or without Lyme disease. The presence of an EM rash suggests coinfection with *Borrelia burgdorferi*.

What tests should be ordered if you suspect anaplasmosis? Initial testing should include a CBC with differential and transaminases. Although blood smears can show granulocyte inclusion bodies, the sensitivity of this is low (<70%). Confirmatory testing using whole blood PCR testing during the acute illness and/or serologic testing of acute and convalescent specimens is primary method of diagnosis.

What is the course of the infection? Although most cases are self-limited with symptoms resolving within 30 days even without antibiotic treatment, the infection can cause significant disease, even requiring hospitalization, in some people, particularly older and immune-compromised individuals.

How is anaplasmosis treated? Because it is not possible to predict who will have self-limiting illness, anyone who has symptoms and is suspected to have anaplasmosis should be treated with doxycycline (100 mg bid) for 10 days. In those with a severe doxycycline allergy, rifampin can be used. Response to treatment is usually rapid (within 24 hours). Fever persisting after 48 hours suggests an infection not susceptible to doxycycline, including another tick borne infection such as babesiosis.

What is Public Health's involvement with anaplasmosis? Public Health recognizes anaplasmosis as an unusual disease occurrence. The laboratory is notifying Public Health on all positive labs to help Public Health understand the burden of disease. As part of tick-borne surveillance, Public Health may follow-up select cases.

How is anaplasmosis prevented? Minimizing the risk of exposure to ticks and prompt tick removal reduces your risk. If the tick was infected, the longer the tick stays attached, the higher your risk of becoming infected. For more information on tick prevention visit the Nova Scotia DHW website on Lyme disease (<https://novascotia.ca/dhw/cdpc/lyme.asp>). There is no evidence that antibiotic prophylaxis for anaplasmosis after a tick bite is effective and it is not recommended.