

Pathology and Laboratory Medicine Memorandum

To: Nova Scotia Health Care Providers and Health Service Directors

From: Dr. Todd Hatchette, Service Chief, Central Zone Microbiology
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Date: January 17, 2024

Subject: **Clarification of laboratory testing options for diagnosis of Anaplasmosis**

In response to increased numbers of *Anaplasma phagocytophilum* infections detected in Nova Scotia the laboratory has seen a significant increase in serology requests. PCR is the primary method for diagnosis and serology of limited value for acute infections. **Effective immediately, serology requests require consultation with a Microbiologist or will otherwise be rejected.** Microbiologists can be contacted at czmicrobiologist@nshealth.ca.

The following is the recommended testing for the diagnosis of acute Anaplasma infection:

1. **Complete blood counts (CBC) with differential and transaminases** should be performed as part of initial investigations if anaplasmosis is suspected.
2. **Anaplasma PCR** is recommended for acute anaplasmosis (between 1-2 weeks from exposure) and PCR on serum has a sensitivity of 96% during acute illness.
 - [When ordering investigation for anaplasmosis, indicate “Anaplasma PCR” unless advised otherwise by Infectious Diseases or Public Health.](#)
 - Anaplasma PCR can be requested specifically; however, this PCR is added routinely to any Lyme serology request.
 - Positive PCR results are reported to the ordering physician and copied to Public Health.

Additional information on Anaplasmosis

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 previously been identified in Nova Scotia, over the last two years there have been over a hundred cases.

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 gastrointestinal 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 erythema migrans (EM) rash suggests coinfection with *Borrelia burgdorferi*.

See: <https://novascotia.ca/dhw/cdpc/documents/statement-management-ld-hga-b-pvi.pdf>

How is anaplasmosis treated? Doxycycline is the treatment of choice for confirmed cases of anaplasmosis in adults and children of all ages. Most cases of anaplasmosis will resolve within 30 days of onset, even without antibiotic treatment, however, complications may arise in older individuals or those with compromised immune systems.

How is anaplasmosis prevented? There is no evidence that antibiotic prophylaxis for anaplasmosis after a tick bite is effective and it is not recommended. Minimizing the risk of exposure to ticks and prompt tick removal reduces your risk of infection. If the tick was infected, the longer the tick stays attached, the higher the 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>).

What is Public Health's involvement with anaplasmosis? Anaplasmosis is a notifiable infection to Public Health and the laboratory notifies Public Health of all positive results.

If you have any questions, please do not hesitate to contact the laboratory at 902-473-6881, Dr. Hatchette at 902-473-6885 or Charles Heinstein at 902-473-2231.