

## Q6 Anaplasmosis

Which *one* of the following statements concerning anaplasmosis is *false*?

- 1. Common laboratory findings include thrombocytopenia and leukopenia.
- 2. It can present with erythema migrans.
- 3. Co-infections with other tick born illnesses are common.
- 4. Doxycycline is the treatment of choice.

**Educational Point:** Anaplasmosis, also known as *human granulocytic anaplasmosis*, is a tick-borne infection of granulocytes caused by the intracellular bacterium *Anaplasma phagocytophilum*. In North America anaplasmosis is transmitted through the bite of infected blacklegged ticks (*Ixodes scapularis*) or western blacklegged ticks (*Ixodes pacificus*). These tick vectors may also carry other pathogens including *Borrelia burgdorferi* (which causes Lyme disease), *Babesia* species (babesiosis), and Powassan virus.

Historically, anaplasmosis has been a rare condition in Canada, with few sporadic cases reported. However, due to climate change and other ecological factors, tick populations are growing in both numbers and range. One study conducted in Ontario in 2016 estimated the range of tick populations is expanding northward at approximately 46 kilometres per year. In 2024 Health Canada designated anaplasmosis a nationally reportable disease.

Human cases of anaplasmosis have primarily been reported in Ontario, Quebec, New Brunswick, Nova Scotia, and Manitoba, although a few cases have also been reported in Alberta. Between May 2023 and July 2024 more than 514 cases were reported in Nova Scotia. In 2023 there were 40 reported cases of anaplasmosis in Ontario. Previous reports from Ontario and Quebec described regional clusters of up to 25 cases within a single transmission season, highlighting the emergence of localized outbreaks in high-risk areas. The incidence of anaplasmosis is expected to rise as environmental change continues to drive the expansion of tick populations.

Symptoms typically occur between 5 and 21 days after a tick bite and commonly present as a febrile illness with nonspecific symptoms of headache, arthralgias, myalgias, and malaise.

**Unlike those with anaplasmosis, patients with Lyme disease**

**may present with an erythema migrans (bull's eye) rash at the site of the tick bite. Common laboratory findings of anaplasmosis include thrombocytopenia, leukopenia, and mild transaminitis. Rash is an uncommon feature of anaplasmosis, occurring in approximately 6% to 14% of cases.**

Definitive diagnosis is made with either polymerase chain reaction (PCR) or serologic testing. PCR amplification testing has high specificity and sensitivity during the early, acute phase of infection. **Co-infections of anaplasmosis and other tick-borne illnesses such as Lyme disease and babesiosis often occur, given that *I scapularis* and *I pacificus* ticks are common vectors. The most common co-infection is Lyme disease.**

Most patients with anaplasmosis typically have mild or even subclinical cases; some patients may recover spontaneously without treatment. However, a small proportion of patients may develop serious or fatal outcomes. Given possible delays and early false-negative test results, empiric treatment before diagnostic confirmation is recommended in patients with suspected anaplasmosis, as delayed treatment may increase the risk of complications (grade II evidence). **First-line antibiotic treatment for adults is 100 mg of doxycycline twice daily (orally or intravenously) for 10 days (grade III evidence). For children weighing less than 45 kg (100 lb), the recommended dose of doxycycline is 2.2 mg/kg twice daily (orally or intravenously) (grade III evidence).** If clinical improvement is not seen beyond 48 hours after antibiotic initiation, alternative diagnoses should be considered.

*The correct answer is 2.*

**Reference:** Ngo C, Koubaesh C, MacFadden D, Joo P. Anaplasmosis: Emerging threat in Canada. *Can Fam Physician*. 2025 Oct;71(10):623-627.

**Link:** <https://www.cfp.ca/content/71/10/623>

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