

CDC Reports Rise in Deadly Tickborne Illness, Anaplasmosis Cases Up

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Tickborne illnesses remain a persistent, often underdiagnosed threat across Europe, with clinicians frequently facing diagnostic challenges due to non-specific symptoms. While Lyme disease captures most of the public's attention, other less common but equally dangerous pathogens circulate. The Centers for Disease Control and Prevention (CDC) recently highlighted a rise in anaplasmosis cases, a severe tickborne rickettsial disease, urging heightened vigilance among healthcare providers.

KEY TAKEAWAYS

- **The Pivot:** Anaplasmosis, a potentially fatal tickborne illness, is increasing in incidence across regions previously considered low-risk.
- **The Data:** Specific incidence rates vary by region, but overall trends show a clear upward trajectory in reported cases over the last decade.
- **The Action:** Clinicians should consider anaplasmosis in patients presenting with fever, headache, and myalgia, especially after tick exposure, and initiate doxycycline empirically.

Anaplasmosis, caused by the bacterium *Anaplasma phagocytophilum*, transmits to humans primarily through the bite of infected *Ixodes scapularis* (blacklegged) ticks in the northeastern and upper midwestern United States, and *Ixodes pacificus* (western blacklegged) ticks on the Pacific coast. This zoonotic disease, while historically less prevalent than Lyme disease, presents with a similar constellation of non-specific symptoms, making early diagnosis challenging. The CDC's recent surveillance data indicates a concerning upward trend in reported cases, particularly in areas where the tick vector populations are expanding. This expansion is attributed to various factors, including climate change, reforestation, and increasing deer populations, which serve as primary hosts for adult ticks.¹

The clinical presentation of anaplasmosis typically begins 1 to 2 weeks after a tick bite, though many patients do not recall a specific bite. Initial symptoms often include fever, severe headache, malaise, myalgia, and chills. Gastrointestinal symptoms like nausea, vomiting, and diarrhea can also occur. A rash is uncommon, appearing in fewer than 10% of cases, which further complicates differentiation from other febrile illnesses. Laboratory findings frequently reveal leukopenia (often neutropenia), thrombocytopenia, and elevated liver transaminases. These hematologic abnormalities are key indicators that can prompt suspicion for anaplasmosis, especially in endemic areas.¹

The Pathogenesis and Clinical Course

Anaplasma phagocytophilum infects neutrophils, replicating within phagosomes and forming characteristic morulae, which are visible on Giemsa-stained peripheral blood smears. This intracellular replication leads to the destruction of

infected neutrophils and can trigger a systemic inflammatory response. The severity of anaplasmosis varies widely, from mild, self-limiting illness to severe, life-threatening disease requiring intensive care. Risk factors for severe disease include advanced age, immunosuppression, and delayed treatment. Complications can include respiratory failure, renal failure, septic shock, disseminated intravascular coagulation (DIC), and opportunistic infections. Encephalitis and peripheral neuropathy are rare but documented neurological complications.²

Diagnosis relies on a combination of clinical suspicion, laboratory abnormalities, and confirmatory tests. Polymerase chain reaction (PCR) testing on blood samples is the most sensitive and specific method for detecting *A. phagocytophilum* DNA during the acute phase of illness. Serology, specifically indirect immunofluorescence assay (IFA) for IgM and IgG antibodies, can confirm infection but may not be positive during the initial acute phase, as antibody titers rise later in the disease course. Paired acute and convalescent sera, collected 2 to 4 weeks apart, demonstrate a fourfold rise in antibody titer, which is considered diagnostic. Microscopic examination for morulae in neutrophils on blood smears is rapid but has low sensitivity, as morulae are often sparse and difficult to identify.²

Treatment for anaplasmosis is straightforward: doxycycline. It is highly effective against *A. phagocytophilum* and should be initiated empirically when anaplasmosis is suspected, without waiting for confirmatory laboratory results. Delaying treatment significantly increases the risk of severe complications and mortality. The recommended dosage for adults is 100 mg orally or intravenously twice daily for 10 to 14 days, or for at least 3 days after the fever subsides. For children, the dosage is 2.2 mg/kg twice daily, up to a maximum of 100 mg per dose. Despite concerns about tooth staining in children, the CDC and other major medical bodies recommend doxycycline for all ages due to the severity of the disease and the lack of equally effective alternatives. The risk of permanent tooth discoloration is minimal with short courses of doxycycline.³

The increasing incidence of anaplasmosis underscores the need for enhanced public health surveillance and clinician education. The geographic range of *Ixodes* ticks continues to expand, bringing the risk of anaplasmosis to new regions. Public health campaigns focusing on tick bite prevention, including wearing protective clothing, using insect repellents containing DEET or permethrin, and performing thorough tick checks after outdoor activities, remain critical. Clinicians in both endemic and emerging risk areas must maintain a high index of suspicion for anaplasmosis, especially during peak tick activity seasons (spring and summer), but also throughout the year in milder climates. The prompt recognition of symptoms and initiation of appropriate antibiotic therapy are paramount to preventing severe outcomes.³

CLINICAL IMPLICATIONS

The CDC's recent data on rising anaplasmosis cases is not merely an epidemiological footnote; it is a direct call to action for European GPs and specialists. The non-specific presentation of this tickborne illness means it often masquerades as a viral infection, leading to dangerous delays in diagnosis and treatment. Clinicians must now consider anaplasmosis more broadly, even in regions not traditionally considered high-risk, given the expanding geographic reach of tick vectors.

The implications for patient management are clear: if a patient presents with fever, headache, and myalgia, particularly with a history of outdoor activity, empirical doxycycline should be a strong consideration. Waiting for confirmatory PCR results, which can take days, is a luxury many patients with severe anaplasmosis cannot afford. The potential for severe complications, including organ failure and death, far outweighs the minimal

risks associated with a short course of doxycycline.

This trend also highlights a broader challenge in infectious disease surveillance. As tick populations shift and expand, so too does the epidemiological map of associated diseases. Public health agencies need to invest more in real-time data collection and dissemination, ensuring clinicians have the most current information on local disease prevalence. Without this, we are asking clinicians to practice medicine with outdated intelligence, a recipe for missed diagnoses and preventable morbidity.

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