Lyme Prophylaxis Risk Often Outweighs Benefit

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BY BRUCE JANCIN
FROM AN ANNUAL CONFERENCE ON PEDIATRIC INFECTIOUS DISEASES

VAIL, COLO. — Antimicrobial prophylaxis for Lyme disease should not be used when a patient arrives at the clinic with a recognized tick bite, according to Dr. Sean O’Leary.

“This is actually a fairly common call to our infectious diseases division in the summertime: ‘I had a child come into the office. We’ve got the tick. What do we do?’” he said at the conference sponsored by the Children’s Hospital, Denver.

The answer he and his pediatric infectious disease colleagues at the hospital almost always provide is a strong “no” to antimicrobial prophylaxis. That’s consistent with detailed Infectious Diseases Society of America (IDSA) guidelines on the topic, he noted.

The risk/benefit numbers argue against prophylaxis under most circumstances, he continued. If a 1.4% attack rate of Lyme disease following a tick bite in an endemic area is assumed, the number needed to treat in order to prevent 1 infection is 83 patients, said Dr. O’Leary of the Children’s Hospital and the University of Colorado, both in Denver.

With the use of amoxicillin for prophylaxis, for every 10 cases of early Lyme disease prevented, it’s to be expected that 1 patient would develop a severe, life-threatening drug reaction and 10 would experience a drug-induced rash. And, in a study involving prophylaxis with doxycycline, 30% of patients had adverse events.

The IDSA guidelines specify the limited circumstances in which prophylaxis is “moderately” favored.

Dr. O’Leary

New Hampshire Had Highest Lyme Disease Incidence in 2008
(per 100,000 population)

Source: Centers for Disease Control and Prevention

Misdiagnosing Tick Paralysis Can Lead to Death in 10%

BY BRUCE JANCIN
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VAIL, COLO. — Tick paralysis is often misdiagnosed—with potentially dire consequences—as one of the other diseases that cause an acute ascending paralysis with preserved mental status.

The arthropod-inflicted paralysis is most often confused with Guillain-Barré syndrome. Other causes of an acute ascending paralysis with preserved mental status include spinal cord tumors and acute poliomyelitis. Botulism, in contrast, causes a descending paralysis with preserved sensorium, particularly when there is a history consistent with potential tick exposure.

Treatment of tick paralysis is simple: Remove the tick. Clinical improvement will follow within hours.

In unrecognized and untreated cases of tick paralysis, however, the fatality rate is about 10%, with death typically occurring just 18-30 hours after symptom onset, according to Dr. O’Leary of the Children’s Hospital and the University of Colorado, both in Denver.

Tick paralysis is more common in children than adults. The highest-risk group is young girls with long hair that can readily hide an engorged tick that’s had a blood meal. At 3 days after attachment, the tick (usually a female) begins secreting the neurotoxin that causes the paralysis. Symptoms appear 4-7 days after attachment.

The peak time for tick paralysis is tick mating season: April through June.

The clinical scenario typically begins with loss of appetite and voice, followed by gait instability, ascending flaccid paralysis, excessive salivation, eye irritation, pupal asymmetry, and vomiting.

Death usually is from respiratory failure. For more than a half century, there have been post-mortem reports of ticks being found embedded in the skin of people who died suddenly of unexplained paralytic illnesses.

The Rocky Mountain wood tick Dermacentor andersoni is a vector of Rocky Mountain spotted fever.

About 8% of the 870 named tick species have been associated with intoxication syndromes.

The species that cause the most cases of human, dog, and livestock paralysis in North America are Dermacentor andersoni and D. variabilis, both of which are vectors for the rickettsial disease Rocky Mountain spotted fever. In the United States, tick paralysis occurs most often in the Pacific Northwest and Rocky Mountain states.

The tick toxin’s pathogenic mechanism isn’t fully understood. Australian investigators have reported that the toxin inhibits acetylcholine release at the neuromuscular synapse, but tick paralysis there is caused by Ixodes species, and it’s not clear that the same mechanism is at work in the paralysis caused by Dermacentor species, Dr. O’Leary said.

Disclosures: Dr. O’Leary said he had no relevant financial conflicts.