

Broad range of presentations for Lyme carditis cases

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“[Lyme carditis] is caused by direct invasion of myocardial tissue by spirochetes and an immunological host response causing lymphocyte inflammation,” [writes Marcos.¹](#)

Furthermore, “*B. burgdorferi* has a predisposition to cause inflammation of the atrioventricular (AV) node resulting in variable conduction abnormalities.”

The 18 patients with possible Lyme carditis were predominantly Caucasian males with a mean age of 44.5 years (range was 24-79).

All of the patients met the CDC surveillance case definition for Lyme disease. One patient had an erythema migrans (EM) rash with negative blood tests.

The remaining 17 individuals had 2-3 IgM specific bands for Lyme disease. Of these, 5 presented with an EM rash and 11 had 5 or more IgG bands, explains Marcos.

“The most common symptoms at presentation were chest tightness, dizziness, and dyspnea on exertion and symptoms had been present for 4-30 days,” writes Marcos.

The 18 patients exhibited a wide range of abnormal EKG findings:

- 4 - AV block (2nd and 1st degree AV block)
- 6 - Right bundle branch conduction abnormalities
- 2 - New onset of atrial fibrillation
- 3 - T wave inversion
- 1 - Sinus bradycardia with ST elevation
- 2 - Prolonged QT interval

The authors were not able to address the outcome as the study was retrospective.

Marcos and colleagues were able to find a growing number of Lyme carditis cases in the literature. The most common presentation involved atrioventricular conduction abnormalities. Others included: right bundle branch block (RBBB), left bundle branch block (LBBB), widening of the QRS complex, AV dissociation, atrial fibrillation, ventricular dysfunction, fulminant myocarditis, and cardiac arrest.

“The spectrum of ECG abnormalities in [Lyme disease] may be broader than that previously suspected,” the authors conclude. “Clinicians should be aware of these ECG abnormalities that may be a sign of [Lyme carditis] in hyperendemic areas.”

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References:

1. Marcos LA, Castle PM, Smith K, Khoo T, Morley EJ, Bloom M, Fries BC. Risk factors for Lyme carditis: A case-control study. Eur J Prev Cardiol. 2019 Sep 19:2047487319876046.

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