

Long-term Outcomes in Treated Lyme Carditis: A Case Series

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Introduction/Background: Lyme disease (LD) is a tick-borne bacterial infection caused by *Borrelia burgdorferi*. Lyme carditis (LC) is an early-disseminated manifestation of LD, commonly manifesting as high-degree atrioventricular block (AVB) that fluctuates rapidly over minutes to days. Most conduction abnormalities caused by LC resolves with appropriate antibiotic therapy. However, the long-term outcomes of treated LC are not known. In this case series, we describe and characterize the long-term outcomes of patients treated with LC.

Methods: Prospective study of patients with serologically-confirmed LC. All were treated with the standard protocol designed at our center including 10 days of intravenous ceftriaxone followed by oral antibiotics for a total course of 3 weeks. All patients performed a stress test at discharge with 1:1 AV conduction above 120 bpm.

Results: Seven patients (mean age 31.3 years, 86% male) with LC presented with second-degree type I/II or third-degree AVB to our center. Presenting symptoms included malaise (71%), presyncope (43%), syncope (29%), palpitations (57%), and dyspnea (43%). 2 patients required temporary pacing for symptomatic bradycardia. Mean follow-up was 20.8 months, at which time all patients were asymptomatic and resumed usual physical activities. All were in sinus rhythm without any repolarization abnormalities. None required permanent pacing. A summary of short- and long-term outcomes is shown in **Table 1**.

Discussions/Conclusion: To our knowledge, this is the first prospective study characterizing long-term LC follow-up. All patients in this study were asymptomatic, in sinus rhythm, and had no conduction abnormalities in long-term follow-up. Given the lack of literature on long-term outcomes of LC, further prospective studies are necessary to develop evidence-based guidelines.

Table 1. Results of 7 patients with serologically-confirmed Lyme carditis.

	n = 7
Initial Admission for Lyme Carditis	
Suspicious Index in Lyme Carditis (SILC) score	7 (5-12)
Temporary pacing wire (%)	28.6
Abnormal echocardiogram during admission (%)	28.6
Time to resolution of conduction abnormalities (days)	3.0 (2-10)
Follow-up	
Asymptomatic (%)	100
Sinus rhythm (%)	100
Heart rate (bpm)	49 (45-103)
PR interval (ms)	168 (150-188)
QRS interval (ms)	92 (82-102)

*continuous variables reported as median (range)