

Pacemakers for Lyme carditis

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Lyme disease can directly infiltrate the heart leading to an exaggerated inflammatory response when spirochetes penetrate the heart. Lyme carditis can appear within 1 to 2 months after the onset of a Lyme disease infection, [wrote Yeung and Baranchuk](#).¹ They point out, the most common presentation of LC (90%) is high-degree atrioventricular (AV) block (AVB).

AV block due to Lyme disease can be successfully treated with antibiotics in a hospital setting. However, in some cases, a temporary or permanent pacemaker is required. In reviewing the literature, Besant and colleagues found that 17.9% of patients with LC required a permanent pacemaker and 10.3% required a temporary and a permanent pacemaker.²

“High-degree atrioventricular block is the most common presentation of [Lyme carditis], and usually resolves with antibiotic therapy.”¹

Yeung et al. highlighted the importance of avoiding a permanent pacemaker “to prevent the inherent risks of pacemaker implantation, including periprocedural infections and complications, lead dislodgement, etc.”

Furthermore, the authors emphasized the importance in avoiding a permanent pacemaker in children. “An unnecessary pacemaker implantation would result in a subsequent lifetime of multiple pulse generator changes, psychological/physical sequelae, and burden of associated cumulative health care costs.”

They concluded, “A systematic approach to the diagnosis and treatment of LC will facilitate the identification of LC in patients with high-degree AVB, thus preventing unnecessary implantation of permanent pacemakers.”

Both a standard transvenous temporary pacemaker lead, or modified temporary–permanent transvenous pacing are available.

“In modified temporary– permanent transvenous pacing, an active fixation lead is attached to a resterilized permanent pace- maker generator taped to the patient’s skin and used as a temporary external device, which allows for early ambulation,” wrote Yeung and Baranchuk.

A permanent pacemaker has been recommended if AV conduction is not restored.

Related Articles:

[Successful removal of pacemakers in patients with Lyme carditis](#)

[5 things to know about Lyme carditis](#)

[How common is Lyme carditis in patients referred for pacemaker implantation?](#)

References:

1. Yeung C, Baranchuk A. Diagnosis and Treatment of Lyme Carditis: JACC Review Topic of the Week. J Am Coll Cardiol. Feb 19 2019;73(6):717-726. doi:10.1016/j.jacc.2018.11.035
2. Besant G, Wan D, Yeung C, et al. Suspicious index in Lyme carditis: Systematic review and proposed new risk score. Clin Cardiol. Dec 2018;41(12):1611-1616. doi:10.1002/clc.23102

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