

How common is Lyme carditis in patients referred for pacemaker implantation?

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In the study [“Prevalence of Lyme Carditis in Patients with Atrioventricular Blocks.”](#) Kaczmarek and colleagues aim to identify patients in whom Lyme carditis (LC) should be considered as the underlying cause of AV conduction disturbances.¹

Investigators examined 130 patients with AVB who had been consecutively admitted over a 12-month period, to the Department of Electrophysiology Medical University of Lodz, Poland, for implantation of a permanent pacemaker.

All of the patients underwent serological testing for *Borrelia burgdorferi* sensu lato (Bbsl).

The majority of the patients had arterial hypertension (64.6%), approximately 1 in 4 had ischemic heart disease (26.2%) and 1 in 5 suffered from diabetes (19.9%) and dyslipidemia (21.9%).

“Atrial fibrillation was reported by 23 patients (17.7%). One sixth (22; 16.9%) of the patients had a history of heart failure, including 13 individuals (10.0%) with a reduced and mildly reduced ejection fraction,” according to Kaczmarek et al.

Lyme carditis in patients admitted for pacemaker implants

Out of the 130 patients, 30 (23.1%) individuals tested positive for *Borrelia burgdorferi*, the causative agent of Lyme disease. “IgM seropositivity indicating acute phase was found in 16 of them (12.3%), which together with clinical scenario of AVB led to initial diagnosis of LC.”

The authors found that Lyme carditis was assumed as the initial diagnosis in 16 patients based on ABV and IgM Bbsl seropositivity.

In 10% of these patients, Lyme carditis was identified as the potential cause of AV conduction disturbances.

“In clinical practice, patients with [Lyme carditis] diagnosis at admission typically receive antibiotics, which seem to be highly effective in resolving advanced atrioventricular conduction abnormalities.”

The clinical characteristics were similar between the Lyme carditis and non-LC group. Nearly 40% of patients in both groups had complete heart block, while second-degree AVB was identified in over 50% of patients in the LC and non-LC group.

The patients did not exhibit any signs or symptoms of acute myocarditis or endocarditis. “Therefore, the atrioventricular conduction disturbances were found to be the unique

clinical presentation of [Lyme carditis] in our study group."

Additionally, Lyme carditis patients were younger and more often exhibited constitutional symptoms of infection, along with fluctuating atrioventricular conduction abnormalities.

Authors Conclude:

- “Lyme carditis should be considered as the initial diagnosis in a relatively high number of patients (8%) admitted with atrioventricular blocks for a permanent pacemaker implantation.”
- “The prevalence of LC was even higher (12%) in the patients without obvious causes of a cardiac conduction system dysfunction.”
- “We confirmed that the fluctuating nature of AVBs reported previously in case reports should be taken into account as a strong predictor of LC in patients referred for a pacemaker implantation.”
- “We suggest that atrioventricular conduction behavior observed on ECG monitoring should be included in the diagnostic process of AVBs that could be potentially [Lyme carditis-related].”

Related Articles:

[Lyme carditis presenting as atrial fibrillation treated successfully](#)

[Another cardiac manifestation of Lyme myocarditis](#)

[Lyme myocarditis in patient with no other signs of Lyme disease](#)

References:

1. Kaczmarek KA, Szwabe K, Urbanek I, Ptaszynski P, Strzelecki A, Wranicz JK, Cygankiewicz I. Prevalence of Lyme Carditis in Patients with Atrioventricular Blocks. International Journal of Environmental Research and Public Health. 2022; 19(22):14893. <https://doi.org/10.3390/ijerph192214893>

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