Long-term outcomes in patients with atrio-ventricular block of unknown aetiology identified before the age of 50 years - A nationwide study

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Topic(s):
Antibradycardia Pacing

Citation:

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Background:
In the young, atrio-ventricular block (AVB) is rare. The aetiology of AVB among young may be congenital or complication to cardiac surgery, but in half the patients, the aetiology is not identified during the preimplantation work-up. Long-term morbidity and mortality in these patients with unexplained AVB is unknown.

Purpose:
To assess morbidity and mortality in young patients with AVB of unknown aetiology.

Methods:
Patients were identified from the national Pacemaker and ICD Registry. We identified all patients below 50 years of age at time of first pacemaker implantation due to AVB during the period from January 1, 1996 until December 31, 2015. Medical records were reviewed and patients with AVB of unknown aetiology were included. We established a control group from the population consisting of 10 controls per case, matched on gender, month and year of birth and alive at time of pacemaker implantation. Patients and controls were followed using the national patient registry, the civil registration system and the cause of death registry. The primary outcome was a composite endpoint consisting of 1) death from any cause, 2) heart-failure hospitalization, 3) ventricular tachyarrhythmia hospitalization and 4) cardiac arrest with successful resuscitation.

Results:
We included 517 patients with unexplained AVB, and 5,170 controls were identified. At baseline, the mean Charlson comorbidity index was 0.34 among patients and 0.11 among controls. After a mean follow-up of 10.09 years (IQR 5.41-14.29 years), the primary endpoint had occurred in 15.09% of the patients and in 3.83% of the controls (hazard ratio 3.68; 95% CI 2.74 to 4.93; P<0.001).

Conclusion:
Atrio-ventricular block of unknown aetiology presenting below the age of 50 years and treated with pacemaker implantation was associated with a significant, 3-4 fold higher rate of serious cardiac events.

Figure 1: Primary endpoint. Composite of death from any cause, heart-failure hospitalization, ventricular tachyarrhythmia hospitalization and cardiac arrest with successful resuscitation
Abstract:

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