Nonspecific Intraventricular Conduction Delay is Associated with Future Occurrence of Atrial Fibrillation in Patients with Structurally Normal Heart and Sinus Rhythm

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Introduction: We aimed to elucidate the long-term prognosis of nonspecific intraventricular conduction delay (NIVCD) in patients with structurally normal heart.

Methods: We included 107,838 patients (age, 52.1 ± 15.5 years; men, 46.8%) who underwent electrocardiography in outpatient clinics (unmatched cohort). NIVCD was defined as QRS duration ≥ 110 ms without meeting the criteria for bundle branch block. Five hundred ninety-eight patients with structurally normal heart and sinus rhythm were assigned to the NIVCD and normal QRS groups according to propensity score with matching variables of age, sex, hypertension, diabetes, and PR interval (matched cohort). Baseline characteristics, electrocardiographic parameters, and clinical outcomes were compared in the cohorts.

Result: In the unmatched cohort, the NIVCD group exhibited the significantly higher frequencies of male sex and preexisting atrial fibrillation (AF), slower sinus rate and longer PR interval than the normal QRS group. In the matched cohort, the cumulative incidence of AF was significantly higher in the NIVCD group than in the normal QRS group during a follow-up period of 8.8 ± 2.9 years. NIVCD significantly increased the risk for AF (hazard ratio, 2.571; 95% confidence interval, 1.074–6.156; p = 0.034).

Conclusion: NIVCD is associated with future occurrence of AF in patients with structurally normal heart.