

Prior History of Atrial Fibrillation and Arrhythmic Outcomes - Data from the WEARIT-II Prospective Registry

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Abstract

Introduction: Wearable Cardioverter Defibrillator (WCD) is utilized in patients with assumed but not yet confirmed risk for sudden cardiac death (SCD). Many of these patients also present with atrial fibrillation (AF). However, the rate of WCD-detected ventricular or atrial arrhythmia events in this specific high-risk cohort is not well understood. **Methods:** In WEARIT-II, the cumulative probability of any sustained or non-sustained VT/VF (WCD-treated and non-treated), and atrial/supraventricular arrhythmias during WCD use was assessed using the Kaplan-Meier method by prior AF, with comparisons by the log-rank test. The incidence of ventricular and atrial arrhythmia events were expressed as events per 100 patient-years, and were analyzed by prior AF using negative binomial regression. **Results:** WEARIT-II enrolled 2000 patients, 557 (28%) of whom had AF prior to enrollment. Cumulative probability of any sustained or non-sustained WCD-detected VT/VF during WCD use was significantly higher among patients with a history of AF than without AF (6% vs. 3%, $p=0.001$). Similarly, the recurrent rate of any sustained or non-sustained VT/VF was significantly higher in patients with prior AF vs. no prior AF (131.5 events per 100 patient-years vs. 22.7 events per 100 patient-years, $p=0.001$). Patients with prior AF also had a significantly higher burden of any WCD-detected atrial arrhythmias/SVT/inappropriate therapy (183.2 events per 100 patient-years vs. 74.8 events per 100 patient-years, $p<0.001$). **Conclusion:** Our results demonstrate that patients with a history of AF wearing the WCD for risk assessment have a higher incidence of ventricular arrhythmias that may facilitate the decision making for ICD implantation.

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