Clinical Impact of Ventricular and Supraventricular Arrhythmia Detection with a Novel Wearable Cardioverter Defibrillator

Anisha Phukan¹, Zain Syed¹, Laura Gustavson², Brian H. Li³, Surovi Hazarika³, Anish Pattisapu³, Mohamed H. Kanj³, Mina K. Chung³, Christine C. Tanaka Esposito³

Background

The wearable cardioverter defibrillator (WCD) can prevent sudden cardiac death (SCD). It also provides continuous monitoring for detection of significant cardiac arrhythmias.

Hypothesis

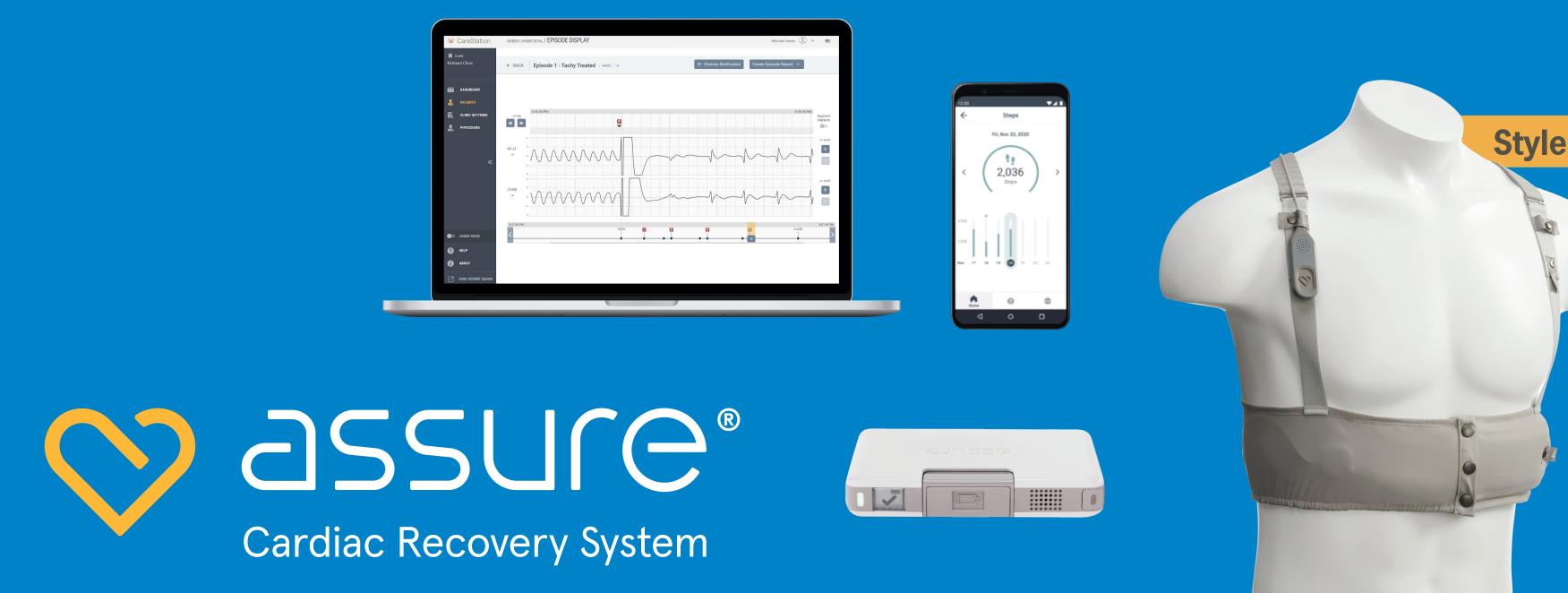
Detection of ventricular and atrial arrhythmia by the WCD can significantly impact clinical decisions and outcomes.

Aims

Report occurrence of ventricular tachycardia/fibrillation (VT/VF) and atrial fibrillation/ flutter (AF/AFL) detected by the WCD and clinical consequence of these diagnoses.

Methods

Retrospective analysis of patients prescribed the ASSURE® WCD at the Cleveland Clinic. Clinical data were collected via medical chart review. Rhythm classification of all device-detected and patient-initiated episodes displayed with 4 independent ECG channels was manually adjudicated by a Board-Certified Electrophysiologist.



Results

Patient Characteristics	
Age (years), mean ± SD	
Female sex, n (%)	
Etiology Ischemic cardiomyopothy Nonischemi Cardiomyopathy Other etiology	
Left Ventricular Ejection Fraction %, mean ± SD	
Compliance Median daily use (hours/days) Median duration of use (days)	

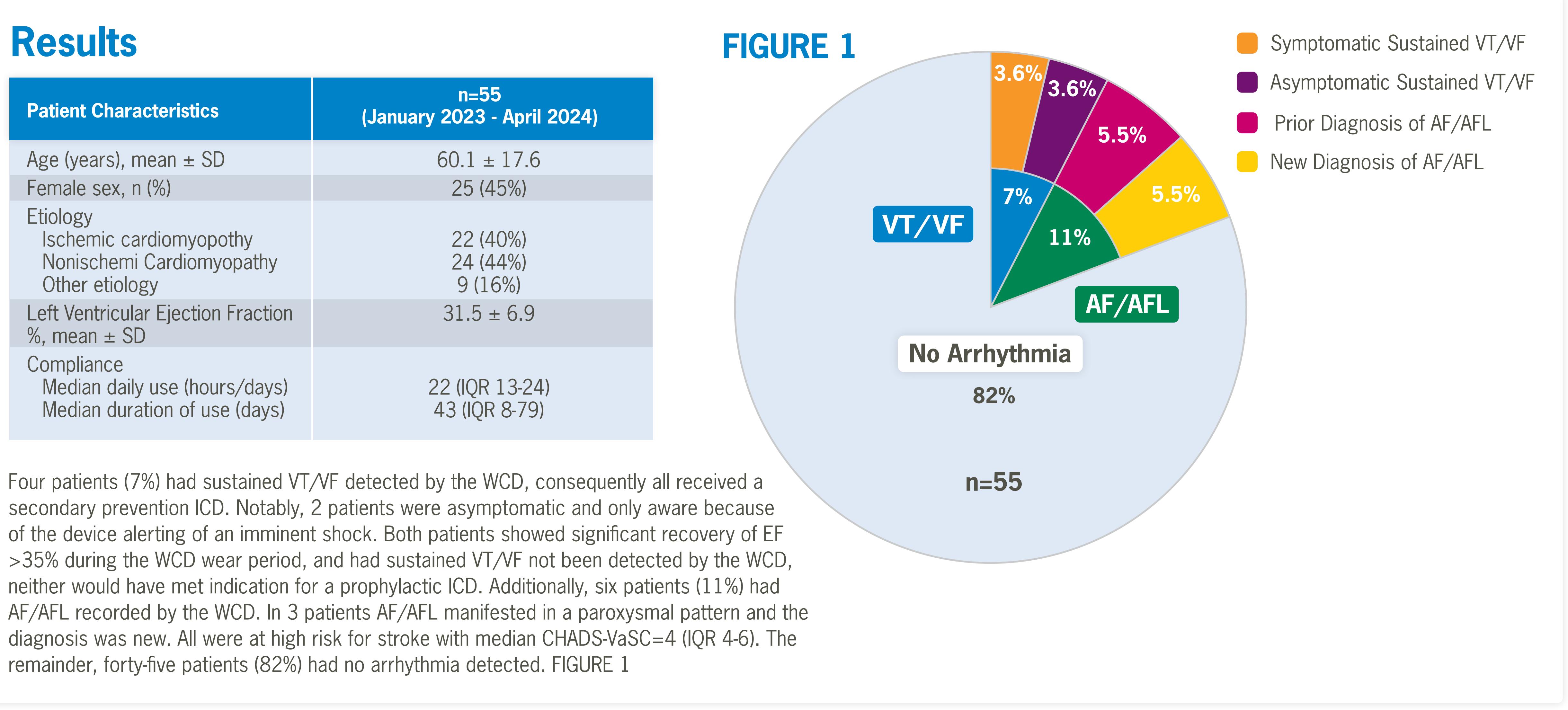
remainder, forty-five patients (82%) had no arrhythmia detected. FIGURE 1

Discussion

In addition to its primary utility for preventing SCD, the ASSURE WCD can detect occult yet clinically significant arrhythmia. Detection of sustained ventricular arrhythmia in asymptomatic at-risk patients resulted in secondary prevention of SCD. Documentation of AF/AFL in high-risk patients similarly led to impactful risk reduction.

Affiliations and References

- Case Western Reserve University, Cleveland, OH, United States. ² Kestra Medical Technologies, Inc., Kirkland, WA, United States.
- ³ Cleveland Clinic, Cleveland, OH, United States.



Disclosures

Christine Tanaka-Esposito receives speaker and consultant honoraria from Kestra Medical Technologies, Inc. and ZOLL Medical Corporation.



