Compliance and False Shock Alarm Rate of a Novel Wearable Cardioverter Defibrillator

Ulrika M. Birgersdotter-Green[1], Marye J. Gleva[2], Kelley R. Branch[5], Rahul N. Doshi[3], Shirley Zulueta[4], Ron Rowbotham[4], Pamela F. Breske[4], Laura Gustavson[4], Jeanne E. Poole[5]

Background

A wearable cardioverter defibrillator (WCD) is indicated to reduce risk for sudden death. Effectiveness is dependent upon wear compliance, which can be compromised by frequent false shock alarms and discomfort. The only randomized controlled trial of the legacy WCD did not demonstrate a statistically significant reduction in arrhythmic death secondary to poor wear compliance.[6]

Objectives

To evaluate patient compliance by sex and false shock alarm rate of a novel WCD designed for reduced false alarms and improved comfort.

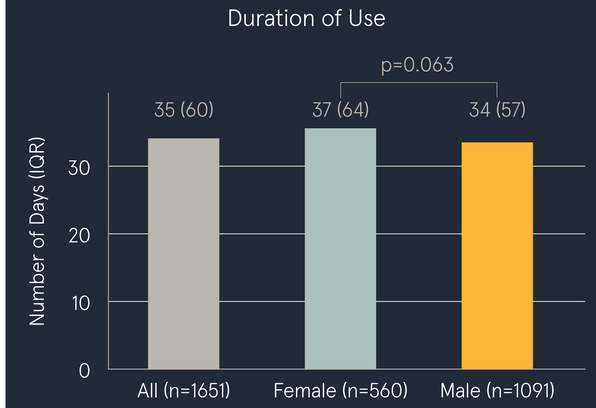
Methods

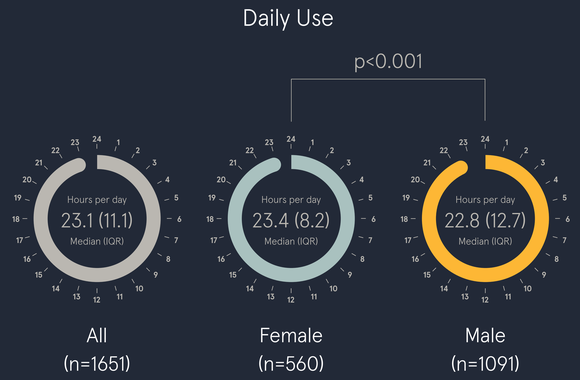
A national WCD patient registry [ASSURE WCD Registry, Kestra Medical Technologies] was used for this retrospective analysis. The ASSURE WCD incorporates algorithm and garment design features to improve comfort, increase noise immunity and decrease false alarms. Patients chose garment style (A or B) and were fit into 1 of 7 sizes.

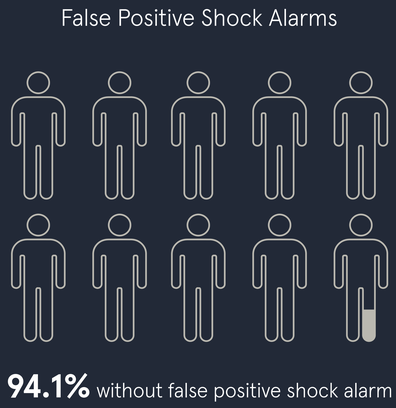
assure®

Results

Analysis included 1,651 patients who completed WCD wear between November 2021 and April 2023. Mean patient age was 65.4 ± 13.7 years; 34% were female. Both styles of garments in all sizes were used. Most females (87%) chose to wear style B, and most males (98%) style A. Overall median daily use was 23.1 hours/day and was higher in females than males. No difference was observed in duration of use. Most patients (94.1%) experienced no false positive shock alarms; 2.8% experienced one; 1.5% experienced two; and 1.6% experienced three or more.







Conclusion

This large real-world patient cohort demonstrated very high compliance in both sexes using a novel WCD. Most patients experienced no false positive shock alarms.

Affiliations and References

[1] UC San Diego Health Systems, La Jolla, CA, United States.
[2] Washington University School of Medicine, Saint Louis, MO, United States.
[3] Honor Health and University of Arizona College of Medicine Phoenix, Scottsdale, AZ, United States.
[4] Kestra Medical Technologies, Inc., Kirkland, WA, United States.
[5] University of Washington School of Medicine, Seattle, WA, United States.

[6] Olgin JE, Lee BK, Vittinghoff E, et al. Impact of wearable cardioverter-defibrillator compliance on outcomes in the VEST trial: As-treated and per-protocol analyses. J Cardiovasc Electrophysiol. 2020;31:1009–1018. https://doi.org/10.1111/jce.14404

Disclosures

Ulrika M. Birgersdotter-Green reports modest consulting honoraria from Medtronic, BSC, Biotronik, Abbott and Philips.

Marye J. Gleva reports modest consulting honoria from Medtronic, Abbott and BIOTRONIK, modest speaking honoraria from Gaffney Events Educational Trust, compensation from the University of Rochester (Rochester NY) and Prairie Education and Research Institute (Springfield, IL) for research committee participation.

Kelley R. Branch reports institutional research grant support and modest consulting honoraria from Kestra Medical Technologies, Inc.

Rahul N. Doshi reports modest consulting honoraria from Kestra Medical Technologies, Abbott Medical, Boston Scientific, Zoll Medical and Impulse Dynamics.

Jeanne E. Poole reports institutional research grant support from Kestra Medical Technologies, Biotronik, Atricure and Boston Scientific. Dr Poole also reports compensation from the University of Rochester (Rochester NY) for research committee participation and from the Heart Rhythm Society for Core Concepts Educational Course and for Editor-in-Chief for the Heart Rhythm O2 Journal.

Shirley Zulueta, Ron Rowbotham, Pamela Breske and Laura Gustavson are employees and stockholders of Kestra Medical Technologies, Inc.

HEART RHYTHM 24
BRINGING THE WORLD OF EP TOGETHER
MAY 16 - 19, 2024 • BOSTON, MA

MKT-00113-01_A