# Wearable Cardioverter Defibrillator (WCD) in Italy: results from the nationwide multi-center registry WEAR-ITA

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BACKGROUND

The Wearable Cardioverter Defibrillators (WCD) has been used extensively in Italy since 2015, following long years of experience in other countries. This technology provides temporary protection from Sudden Cardiac Death (SCD) for patients with an evolving risk profile that may not yet be eligible for an Implantable Cardioverter Defibrillator (ICD). Collecting national data on use of the device can help build a picture that will enable an understanding on how to use the WCD appropriately in the future.

PURPOSE

Our purpose has been to investigate WCD usage on a nationwide level. This is in terms of target population, average wear time, patient compliance, diagnosed and treated arrhythmic events and patient outcome once they stopped wearing the device.

METHODS

WEAR-ITA is a nationwide, multi-centre retrospective observational project. Patient data was retrospectively collected from the Italian hospitals that agreed to take part in the data collection for all patients fitted with a WCD between April 2015 to May 2018. All data refers to the range from the first day of wear until the end of use.

RESULTS

We collected data for 411 patients from 15 (75%) Italian regions. WCD use among the different regions was heterogeneous with a median of 0.5 (0.2-1.2) WCD wore/$10^5$ inhabitants. The mean age of the population was 55(±14) and the majority of patients were male (79%). Main WCD indication was non-ischemic cardiomyopathy with reduced ejection fraction (51%), ischemic etiology with severe systolic dysfunction (31%), uncertain or unidentified diagnosis (10%) that then revealed to be predominantly channelopathies or myocarditis and after ICD extraction (8%). Patients wore the WCD for a median of 59 (33-90) days and the median daily weartime was 23 (22,7-23,8) hours. In 15 patients (4%), the WCD recorded non sustained ventricular tachycardia (VT), 10 patients (2%) had hemodynamically well-tolerated sustained VT not needing a shock. 8 patients (2%) received effective appropriate shocks. Time to episodes were respectively 61 (14-61) days for non-sustained VT and 28 (19-70) days for VT/VF. 2 patients (0.5%) received inappropriate shocks for sinus tachycardia and atrial fibrillation (AF) respectively. WCD recorded new onset of supra ventricular tachycardia episodes in 12 patients (3%) and of atrial fibrillation (AF) in 7 patients (2%). 7 patients (2%) died while wearing WCD; none of them from SCD. At the end of the WCD use, 195 patients (47%) did not receive an ICD while 209 patients (51%)were implanted.

CONCLUSIONS

WCD is an effective therapy for the treatment of SCD with a very low complication rates. The indication and penetration in Italy is quite heterogeneous. The patient's compliance is high over time. The incidence of appropriate shock is not negligible; only half of patients, who wore WCD, received an ICD. There is however still a requirement to conduct further randomized trials to understand which patients could most benefit from the use of WCD.

Abstract Figure. Wereable Cardioverter Defibrillator

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