
The study, originally presented in abstract form at Heart Rhythm 2011, represents a pooled analysis of 2,883 patients and is a strong endorsement of MTWA testing in patients with a broad spectrum of ejection fractions.

“In patients without ICDs, MTWA testing is a powerful predictor of SCD. Among patients with LVEF ≤ 35%, a negative MTWA test is associated with a low risk for SCD. Conversely, among patients with LVEF > 35%, a positive MTWA test identifies patients at significantly heightened SCD risk. These findings may have important implications for refining primary prevention ICD treatment algorithms.”

Some key points:

- A negative MTWA test result identified a population of patients at very low risk of SCA, regardless of ejection fraction. The annual event rate was 0.9% in patients with EF ≤ 35% and 0.3% in patients with EF>35%. This corresponds to an NPV of 99.1% and 99.7%, respectively, at one year.

- In the overall cohort, a patient with a positive test was almost 9.0 times more likely to experience SCD than a patient with a negative test. The authors note that “even among patients with LVEF > 35%, a positive MTWA test identifies a cohort at significantly heightened risk of SCD for whom targeted therapies may be beneficial to mitigate arrhythmic risk.”

- The study confirms the prognostic value of a test that is indeterminate (due to physiologic reasons) in patients with a reduced EF: “The risk of SCD among patients with indeterminate MTWA results is highly dependent on ejection fraction. Among patients with LVEF ≤ 35%, an indeterminate MTWA test – particularly among those who are indeterminate due to excessive ectopy or inadequate HR – predicts an increased risk of SCD at least as well as a positive test. In contrast, an indeterminate MTWA test in patients with LVEF > 35% does not predict an increase SCD and therefore, these patients should not be grouped with patients who test positive.”

The study is currently in press and the abstract can be found on the Heart Rhythm website.