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MICROVOLT T-WAVE ALTERNANS AS A PREDICTOR OF MORTALITY AND SEVERE ARRHYTHMIAS IN PATIENTS WITH CARDIAC DYSFUNCTION

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Xiao-Qing Quan, Cun-Tai Zhang. *Department of Geriatrics, Tongji Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China*

Objectives Our previous study shows that Microvolt T-wave alternans (MTWA) testing has significant value for the prediction of mortality or severe arrhythmic events in a population of individuals with implanted ICDs. Whether MTWA is an accurate predictor of ventricular tachyarrhythmic events in patients without ICDs remains unclear. We conducted a meta-analysis of the predictive value of MTWA testing for mortality and severe arrhythmic events in patients with cardiac dysfunction but without implanted ICDs.

Methods Prospective studies of the predictive value of exercise-induced MTWA published between January 1990 and January 2012 were retrieved. All the patients had cardiac dysfunction but without implanted ICDs. Summary estimates of the predictive value of MTWA were derived with a random-effects model.

Results Data were accumulated from seven studies involving a total of 2953 patients, including 662 positive, 1705 negative, 340 indeterminate, and 246 non-negative (which includes both positive and indeterminate tests) MTWA test results. The risk of mortality or severe arrhythmic events was higher in patients with an abnormal MTWA compared to a negative test (HR=4.51, 95% CI=2.28 to 8.89). Similar results were obtained in primary or secondary prevention patients.

Conclusions This study found that MTWA testing has significant value for the prediction of mortality or severe arrhythmic events in a population of individuals with cardiac dysfunction but without implanted ICDs.