Medical Coverage Policy | Microvolt T-Wave Alternans Testing

EFFECTIVE DATE: 01|20|2015
POLICY LAST UPDATED: 03|15|2023

OVERVIEW

Microvolt T-wave alternans (MTWA) testing has been investigated as a noninvasive test to identify a patient's risk for sudden cardiac death. The test measures the beat-to-beat microvolt variation in the amplitude of the electrocardiogram tracing. Some research indicates a positive test has a greater risk of developing ventricular tachyarrhythimas than a negative test.

PRIOR AUTHORIZATION

Medicare Advantage Plans and Commercial Products
Prior authorization review is not required.

POLICY STATEMENT

Medicare Advantage Plans
Microvolt T-wave alternans testing is covered.

Note: Blue Cross & Blue Shield of Rhode Island (BCBSRI) must follow Centers for Medicare and Medicaid Services (CMS) guidelines, such as national coverage determinations or local coverage determinations for all Medicare Advantage Plans policies. Therefore, Medicare Advantage Plans policies may differ from Commercial products. In some instances, benefits for Medicare Advantage Plans may be greater than what is allowed by the CMS.

Commercial Products
Microvolt T-wave alternans testing is not medically necessary as the evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

MEDICAL CRITERIA

Not applicable

BACKGROUND

Microvolt T-wave alternans (MTWA) refers to a beat-to-beat variability in T-wave amplitude. Because a routine electrocardiogram (EKG) cannot detect these small fluctuations, this test requires specialized sensors to detect the fluctuations and computer algorithms to evaluate the results. T-wave alternans is measured by a provocative test that requires gradual elevation of the heart rate to more than 110 beats per minute. The test can be performed in conjunction with an exercise tolerance stress test. Test results are reported as the number of standard deviations (SDs) by which the peak signal of the T-wave exceeds the background noise. This number is referred to as the alternans ratio. An alternans ratio of 3 or greater is typically considered a positive result, an absent alternans ratio is considered a negative result, and other values are indeterminate.

The presence of T-wave alternans has been investigated as a risk factor for fatal arrhythmias and sudden cardiac death in patients with a history of myocardial infarction (MI), heart failure, or cardiomyopathy. Patients with these disorders at high-risk for sudden cardiac death may be treated with medications to suppress the emergence of arrhythmias or undergo implantation of cardiac defibrillators to terminate tachyarrhythmias when they occur. Since sudden cardiac death is one of the most common causes of death

after a MI or in patients with dilated cardiomyopathy, there is substantial interest in risk stratification to target therapy.

Patient groups are categorized into those who have not experienced a life-threatening arrhythmia (i.e., primary prevention) and those who have (i.e., secondary prevention). Those who have experienced a life-threatening arrhythmia are already at high risk and would not be considered for testing. T-wave alternans is one of many risk factors that have been investigated for identifying candidates for primary prevention. Others include left ventricular ejection fraction (LVEF), arrhythmias detected on Holter monitor or electrophysiologic studies, heart rate variability, and baroreceptor sensitivity. Signal-averaged electrocardiography (SAECG) is another technique for risk stratification. It measures beat-averaged conduction, while T-wave alternans measures beat-to-beat variability.

T-wave alternans has also been investigated as a diagnostic test for patients with syncope of unknown origin and as a noninvasive test to identify candidates for further invasive electrophysiology testing of the heart.

Microvolt T-wave alternans is one available method to risk stratify patients who may be at risk for sudden cardiac death and has been proposed to assist in selecting patients for implantable cardioverter-defibrillator (ICD) treatment. Results from prospective multicenter studies enrolling various patient populations undergoing ICD placement as part of primary prevention strategies do not support clinical utility from MTWA used to risk stratify and therefore guide placement. Therefore, this technology is considered not medically necessary.

T-wave alternans is considered not medically necessary as a technique of risk stratification for primary or secondary prevention* of fatal arrhythmias and sudden cardiac death in patients with a history of myocardial infarction, congestive heart failure, cardiomyopathy or other cardiac disorders such as long-QT syndrome (e.g., Brugada syndrome).

*Primary prevention refers to patients that have *not* experienced a life-threatening arrhythmia. Secondary prevention refers to patients that have experienced a life-threatening arrhythmia.

COVERAGE

Benefits may vary between groups/contracts. Please refer to the appropriate Benefit Booklet, Evidence of Coverage or Subscriber Agreement for applicable machine tests or limitations of benefits/coverage when services are not medically necessary.

CODING

The following code is covered for Medicare Advantage Plans and not medically necessary for Commercial products.

93025 Microvolt T-wave alternans for assessment of ventricular arrhythmias

RELATED POLICIES

Not applicable

PUBLISHED

Provider Update, May 2023
Provider Update June 2022
Provider Update, December 2021
Provider Update, June 2020
Provider Update, August 2019

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