Payment Policy | Microvolt T-Wave Alternans Testing

EFFECTIVE DATE: 09|25|2007
POLICY LAST UPDATED: 02|18|2014

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

BlueCHiP for Medicare and Commercial
Prior authorization review is not required.

POLICY STATEMENT

Microvolt T-wave alternans testing is **covered for BlueCHiP for Medicare** members and **not medically necessary for all other BCBSRI products** as there is insufficient peer-reviewed scientific literature that demonstrates that the procedure/service is effective.

Medicare policy is developed separately from BCBSRI policy. Medicare policy incorporates consideration of governmental regulations from CMS (Centers for Medicare and Medicaid Services), such as national coverage determinations or local coverage determinations. In addition to benefit differences, CMS may reach different conclusions regarding the scientific evidence than does BCBSRI. Medicare and BCBSRI policies may differ. However, BlueCHiP for Medicare members must be offered, at least, the same services as Medicare offers.

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 Evidence of Coverage or Subscriber Agreement, for applicable machine test or not medically necessary benefits/coverage.

CODING

The following code(s) are **covered for BlueCHiP for Medicare** and **not medically necessary for Commercial products:**

93025

RELATED POLICIES

Not applicable.

PUBLISHED

Provider Update	Apr 2014
Provider Update	Dec 2012
Provider Update	Jan 2012
Provider Update	Oct 2010
Provider Update	Aug 2009
Provider Update	Sep 2008
Policy Update	Dec 2007

REFERENCES

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4. Blue Cross and Blue Shield Association Technology Evaluation Center (TEC). Microvolt T-Wave Alternans Testing to Risk Stratify Patients Being Considered for ICD Therapy for Primary Prevention of Sudden Death. TEC Assessments 2005; Volume 20, Tab 9.

5. Chan PS, Gold MR, Nallamothu BK. Do Beta-blockers impact microvolt T-wave alternans testing in patients at risk for ventricular arrhythmias? A meta-analysis. J Cardiovasc Electrophysiol 2010; 21(9):1009-14.

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7. Bloomfield DM, Steinman RC, Namerow PB et al. Microvolt T-wave alternans distinguishes between patients likely and patients not likely to benefit from implanted cardiac defibrillator therapy: a solution to the Multicenter Automatic Defibrillator Implantation Trial (MADIT) II conundrum. Circulation 2004; 110(14):1885-9.

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10. Chan PS, Stein K, Chow T et al. Cost-effectiveness of a microvolt T-wave alternans screening strategy for implantable cardioverter-defibrillator placement in the MADIT-II-eligible population. J Am Coll Cardiol 2006; 48(1):112-21.