



Kaiser Foundation Health Plan of Washington

Clinical Review Criteria Microvolt T-Wave Alternans

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Criteria

For Medicare Members

Source	Policy
CMS Coverage Manuals	None
National Coverage Determinations (NCD)	Microvolt T-Wave Alternans 20.30
Local Coverage Determinations (LCD)	None
Local Coverage Article	Decision Memo for Microvolt T-wave Alternans

For Non-Medicare Members

Kaiser Permanente has elected to use the Microvolt T-Wave Alternans (MTWA) (A-0399) MCG* for medical necessity determinations. This service is not covered per MCG guidelines. This procedure is not covered per MCG guideline.

If requesting this service, please send the following documentation to support medical necessity:

- Last 6 months of clinical notes from requesting provider &/or specialist

***The MCG are proprietary and cannot be published and/or distributed.** However, on an individual member basis, Kaiser Permanente can share a copy of the specific criteria document used to make a utilization management decision. If one of your patients is being reviewed using these criteria, you may request a copy of the criteria by calling the Kaiser Permanente Clinical Review staff at 1-800-289-1363.

The following information was used in the development of this document and is provided as background only. It is provided for historical purposes and does not necessarily reflect the most current published literature. When significant new articles are published that impact treatment option, KPWA will review as needed. This information is not to be used as coverage criteria. Please only refer to the criteria listed above for coverage determinations.

Background

The term alternans applies to conditions characterized by the sudden appearance of a periodic beat-to-beat change in some aspect of cardiac electrical or mechanical behavior. Many different examples of electrical alternans have been described clinically; a number of others have been reported in the laboratory.

T-wave alternans has long been recognized as a marker of electrical instability in acute ischemia, where it may precede ventricular tachyarrhythmia. Studies have shown that T wave (or ST-T) alternans can also precede non-ischemic ventricular tachyarrhythmias. Considerable interest has recently been shown in the detection of microvolt T wave alternans as a noninvasive marker of the risk of ventricular tachyarrhythmia in patients with chronic heart disease.

Assessment of left ventricular ejection fraction (LVEF), Holter monitoring, and signal-averaged late potentials are the principal non-invasive means of determining the risk of ventricular arrhythmias after myocardial infarction (MI). However, these measures of vulnerability to arrhythmias have been found to be less predictive of arrhythmic events than invasive electrophysiologic testing.

Microvolt T-wave alternans testing is performed by placing high-resolution electrodes, designed to reduce electrical interference, on a patient's chest prior to a period of controlled exercise (CMS, 2005). These electrodes detect tiny beat-to-beat changes, on the order of one-millionth of volt, in the EKG T-wave. Spectral analysis is used to calculate these minute voltage changes. Spectral analysis is a sensitive mathematical method of measuring and comparing time and the electrocardiogram signals. Software then analyzes these microvolt changes and produces a report to be interpreted by a physician.

Date Created	Date Reviewed	Date Last Revised
07/01/2014	07/01/2014 ^{MPC} , 05/05/2015 ^{MPC} , 03/01/2016 ^{MPC} , 11/07/2017 ^{MPC} , 10/02/2018 ^{MPC}	07/01/2014

^{MDCRPC} Medical Director Clinical Review and Policy Committee

^{MPC} Medical Policy Committee

Revision History	Description

Codes

CPT: 93025