Corporate Medical Policy

Carotid Intimal-Medial Thickness

File Name: carotid_intimal_medial_thickness
Origination: 12/2006
Last Review: 10/2023

Description of Procedure or Service

Ultrasonographic measurement of carotid intimal-medial thickness (CIMT) refers to the use of B-mode ultrasound to determine the thickness of the two innermost layers of the carotid artery wall, the intima and the media. Detection and monitoring of intimal-medial thickening (atherosclerosis) may provide an opportunity to intervene earlier in the atherogenic disease and/or monitor disease progression.

Heart disease is the leading cause of mortality in the United States, accounting for more than half of all deaths. Coronary heart disease (CHD) also known as coronary artery disease, is the most common cause of heart disease. In a 2023 update on heart disease and stroke statistics from the American Heart Association, it was estimated that 720,000 Americans have a new coronary attack (first hospitalization myocardial infarction or CHD death) and 335,000 have a recurrent attack annually.

Established major risk factors for coronary heart disease have been identified by the National Cholesterol Education Program Expert Panel (NCEP). These risk factors include elevated serum levels of low-density lipoprotein cholesterol (LDL-C), total cholesterol and reduced levels of high-density lipoprotein (HDL) cholesterol. Other risk factors include a history of cigarette smoking, hypertension, family history of premature coronary heart disease and age.

The third report of the NCEP Adult Treatment Panel (ATP III) establishes various treatment strategies to modify the risk of coronary heart disease, with emphasis on target goals of LDL-C. Pathology studies have demonstrated that levels of traditional risk factors are associated with the extent and severity of atherosclerosis. The third report of the NCEP recommended use of the Framingham criteria to further stratify those patients with 2 or more risk factors for more intensive lipid management. However, at every level of risk factor exposure, there is substantial variation in the amount of atherosclerosis, presumably related to genetic susceptibility and the influence of other risk factors. There has been interest in identifying a technique that can improve the ability to diagnose those at risk of developing CHD, as well as to measure disease progression, particularly those at intermediate risk.

The carotid arteries can be well visualized by ultrasonography, and ultrasonographic measurement of the carotid intimal-medial thickness (CIMT) and have been investigated as a technique to identify and monitor subclinical atherosclerosis. B-mode ultrasound is most commonly used to measure CIMT. The intimal-medial thickness is measured and averaged over several sites in each carotid artery. Imaging of the far wall of each common carotid artery yields more accurate and reproducible CIMT measurements than imaging of the near wall. Two echogenic lines are produced which represent the lumen-intima interface and the media-adventitia interface. The distance between these two lines constitutes the CIMT.

Regulatory Status

In 2003, SonoCalc® (SonoSite) was cleared for marketing by the U.S. Food and Drug Administration (FDA) through the 510(k) process. The FDA determined that this software was substantially equivalent to existing image display products for use in the automatic measurement of the IMT of the carotid artery from images obtained from ultrasound systems. Subsequently, other devices have been approved through the 510(k) process.

******Note: This Medical Policy is complex and technical. For questions concerning the technical language and/or specific clinical indications for its use, please consult your physician.***

Policy

Carotid Intimal-Medial Thickness measurement is considered investigational for all applications. BCBSNC does not provide coverage for investigational services or procedures.

Benefits Application

This medical policy relates only to the services or supplies described herein. Please refer to the Member's Benefit Booklet for availability of benefits. Member's benefits may vary according to benefit design; therefore member benefit language should be reviewed before applying the terms of this medical policy.

When Carotid Intimal-Medial Thickness Measurement is covered

Not Applicable

When Carotid Intimal-Medial Thickness Measurement is not covered

Ultrasonographic measurement of carotid artery intimal-medial thickness (CIMT) as a technique of identifying subclinical atherosclerosis is considered investigational for use in the screening, diagnosis, or management of atherosclerotic disease.

Policy Guidelines

The evidence for individuals undergoing cardiac risk assessment who receive ultrasonic measurement of carotid intimal-medial thickness (CIMT), includes large cohort studies, case-control studies, and systematic reviews. Relevant outcomes are test accuracy and morbid events. Some studies correlate increased CIMT with other commonly used markers for risk of coronary heart disease (CHD) and with risk for future cardiovascular events. Lorenz et al (2012) found in their meta-analysis that CIMT was associated with increased CV events, although CIMT progression overtime was not associated with increased CV event risk. Peters et al (2012) found that the added predictive value of CIMT was modest, and the ability to reclassify patients into clinically relevant categories was not demonstrated. The results from these reviews and other studies demonstrate the predictive value of CIMT is uncertain, and the predictive ability for any level of population risk cannot be determined with precision. Also, available studies do not define how the use of CIMT in clinical practice improves outcomes. There is no scientific literature that directly tests the hypothesis that measurement of CIMT results in improved patient outcomes and no specific guidance on how measurements of CIMT should be incorporated into risk assessment and risk management. The objective of 1 study, however, was to define “normal” CIMT progression in low to moderate CV risk patients. Study results showed definite patterns related to various factors that could be used as a tool to earlier identify patients at increased CV

risk, but patient outcomes were not assessed. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

The U.S. Preventive Services Task Force (USPSTF, 2009) stated that there was insufficient evidence to recommend the use of carotid intima-medial thickness to screen asymptomatic individuals with no history of CHD to prevent CHD events. In 2018, the USPSTF published a statement on using nontraditional risk factors to assess the risk of CVD; CIMT was not recommended. In 2018, the USPSTF published a recommendation statement on using nontraditional risk factors to assess the risk of CVD; CIMT was not mentioned in this recommendation.

The 2013 guidelines on the assessment of cardiovascular risk from the American College of Cardiology and the American Heart Association (ACC/AHA) did not recommend CIMT for routine risk assessment of a first atherosclerotic cardiovascular disease event (ACC/AHA Class III: no benefit, LOE: B). This differs from the previous 2010 version of the ACC/AHA guidelines for assessment of cardiovascular risk, which indicated CIMT might be reasonable for assessing cardiovascular risk in intermediate risk asymptomatic adults.

Billing/Coding/Physician Documentation Information

This policy may apply to the following codes. Inclusion of a code in this section does not guarantee that it will be reimbursed. For further information on reimbursement guidelines, please see Administrative Policies on the Blue Cross Blue Shield of North Carolina web site at www.bcbsnc.com. They are listed in the Category Search on the Medical Policy search page.

Applicable codes: *93895, 93998*

CPT 93880 describes bilateral duplex scan of extracranial arteries. Because of the detailed measurement involved in calculating carotid intimal-medial thickness, providers may elect to submit these claims with a --22 modifier (unusual procedural service). In addition, linking the CPT code to the ICD-10 code Z13.6 (Encounter for screening for cardiovascular disorders) may help identify claims.

BCBSNC may request medical records for determination of medical necessity. When medical records are requested, letters of support and/or explanation are often useful, but are not sufficient documentation unless all specific information needed to make a medical necessity determination is included.

Scientific Background and Reference Sources

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Specialty Matched Consultant Advisory Panel review 10/2023

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Policy Implementation/Update Information

12/11/06 New Policy issued. Ultrasonographic measurement of carotid artery intima-media thickness (IMT) is considered investigational as a technique of identifying and monitoring subclinical atherosclerosis. (adn)

11/19/07 Specialty Matched Consultant Advisory Panel review meeting 10/29/07. Policy accepted as written. (adn)

Policy renamed: Carotid Intimal-Medial Thickness Study

7/20/09 Policy name changed from Common Carotid Intima-Media Thickness Study to Carotid Intimal-Medial Thickness Study. Description section revised. Policy statement revised to read: "BCBSNC does not provide coverage for carotid intimal-medial thickness studies. It is considered investigational." Statement in the When Not Covered section was revised to read: "Ultrasonographic measurement of carotid artery intimal-medial thickness (IMT) as a technique of identifying subclinical atherosclerosis is considered investigational for use in the screening, diagnosis, or

management of atherosclerotic disease." Coding information added to the Billing/Coding section. (adn)

12/7/09 Specialty Matched Consultant Advisory Panel review meeting 10/30/09. No change to policy statement.(adn)

6/22/10 Policy Number(s) removed (amw)

11/23/10 Specialty Matched Consultant Advisory Panel review 10/2010. Policy Guidelines updated. References updated.(mco)

8/30/11 References updated. Policy Guidelines updated. No changes to Policy Statements. (mco)

11/8/11 Specialty Matched Consultant Advisory Panel review 10/2011. No changes to Policy Statements.(mco)

9/4/12 References updated. No changes to Policy Statements. (mco)

10/30/12 Specialty Matched Consultant Advisory Panel review 10/2012. Description section updated. Policy Guidelines updated. (mco)

8/27/13 References updated. No changes to Policy Statements. (mco)

11/12/13 Specialty Matched Consultant Advisory Panel review 10/2013. Medical Director review 10/2013. Removed the word "Study" from the policy title. Policy Statement revised to state: "Carotid Intimal-Medial Thickness measurement is considered investigational for all applications. BCBSNC does not provide coverage for investigational services or procedures." Policy intent is unchanged. (mco)

8/26/14 References updated. Policy Guidelines updated. No changes to Policy Statement. (mco)

12/30/14 References updated. Specialty Matched Consultant Advisory Panel review 11/2014. Medical Director review 11/2014. Added CPT code 93895 to Billing/Coding section effective 1/1/15. No changes to Policy statement. (td)

10/1/15 Policy Description updated. Policy Guidelines updated. References updated. Policy intent remains unchanged. Medical Director review 7/2015. (td)

1/26/16 Specialty Matched Consultant Advisory Panel review 10/29/2015. Medical Director review 10/2015. (td)

11/22/16 Specialty Matched Consultant Advisory Panel review 10/2016. Medical Director review 10/2016. (jd)

11/10/17 Minor revisions to Description section and Policy Guidelines. Specialty Matched Consultant Advisory Panel review 10/2017. Medical Director review 10/2017. (jd)

6/8/18 Policy guidelines and references updated. Medical Director review 5/2018. (jd)

11/9/18 Minor update to the Billing/Coding section. Specialty Matched Consultant Advisory Panel review 10/2018. Medical Director review 10/2018. (jd)

10/29/19 References updated. Specialty Matched Consultant Advisory Panel review 10/2019. Medical Director review 10/2019. (jd)

11/10/20 References updated. Specialty Matched Consultant Advisory Panel review 10/2020. Medical Director review 10/2020. (jd)

11/2/21 Description section, policy guidelines, and references updated. Specialty Matched Consultant Advisory Panel review 10/2021. Medical Director review 10/2021. (jd)

11/1/22 Minor edits to Description section for clarity, References updated. No change to policy statement. Specialty Matched Consultant Advisory Panel review 10/2022. Medical Director review 10/2022. (tm)

11/7/23 Description section, Policy Guidelines, and References updated. Specialty Matched Consultant Advisory Panel review 10/2023. Medical Director review 10/2023. (tm)