Genetic Testing for Lipoprotein(a) Variant(s) as a Decision Aid for Aspirin Treatment

Description

Lipoprotein(a) (LPA) is a lipid-rich particle similar to low-density lipoprotein and has been determined to be an independent risk factor for coronary artery disease. Patients with a positive test for the LPA genetic variant, rs3798220, have a higher risk for thrombosis and therefore may derive greater benefit from the antithrombotic properties of aspirin. As a result, testing for the rs3798220 variant has been proposed as a method of stratifying benefit from aspirin treatment.

OBJECTIVE

The objective of this evidence review is to determine whether genetic testing for the LPA rs3798220 variant helps direct treatment of individuals at high risk of thrombosis.
POLICY STATEMENT

The use of genetic testing for the \textit{LPA} rs3798220 allele (\textit{LPA}-Aspirin Genotype) is considered \textit{investigational} in patients who are being considered for treatment with aspirin to reduce the risk of cardiovascular events.

POLICY GUIDELINES

There is no specific CPT code for this test.

BENEFIT APPLICATION

Screening (other than the preventive services listed in the brochure) is not covered. Please see Section 6 General exclusions.

Benefits are available for specialized diagnostic genetic testing when it is medically necessary to diagnose and/or manage a patient's existing medical condition. Benefits are not provided for genetic panels when some or all of the tests included in the panel are not covered, are experimental or investigational, or are not medically necessary.

Experimental or investigational procedures, treatments, drugs, or devices are not covered (See General Exclusion Section of brochure).

FDA REGULATORY STATUS

Clinical laboratories may develop and validate tests in-house and market them as a laboratory service; laboratory-developed tests must meet the general regulatory standards of the Clinical Laboratory Improvement Amendments. Berkeley HeartLab/Quest Diagnostics is certified under the auspices of the Clinical Laboratory Improvement Amendments. Laboratories that offer laboratory-developed tests must be licensed by the Clinical Laboratory Improvement Amendments for high-complexity testing. To date, the U.S. Food and Drug Administration has chosen not to require any regulatory review of this test.

RATIONALE

Summary of Evidence

For individuals who have a high risk of thrombosis who receive genetic testing for Lipoprotein(a) (LPA) \textit{LPA} rs3798220 variant, the evidence includes observational studies. Relevant outcomes are test validity, medication use, and morbid events. The \textit{LPA} minor allele, rs3798220, is associated with higher levels of LPA and a higher risk for cardiovascular events. This allele is infrequent in the population and is associated with a modest increase in cardiovascular risk in the general population. Testing for this allele is commercially available, but performance characteristics are uncertain, and standardization of testing has not been demonstrated. Several observational studies have reported that this variant is an independent risk factor for cardiovascular disease, but some studies have not reported a significant association. Evidence from a post hoc analysis of the Women's Health Study reported that carriers of the allele might derive greater benefit from aspirin therapy compared with noncarriers. It is unclear whether this information, which derives from genetic testing, leads to changes in management; in particular, it cannot be determined from available evidence whether deviating from current guidelines on aspirin therapy based on \textit{LPA} genetic testing improves outcomes. The evidence is insufficient to determine the effects of the technology on health outcomes.
SUPPLEMENTAL INFORMATION

Practice Guidelines and Position Statements

A number of guidelines contain recommendations for testing of lipoprotein(a) serum levels, but none were identified with recommendations for genetic testing.\textsuperscript{14}

American College of Cardiology/American Heart Association

The American College of Cardiology and American Heart Association (2013) issued joint guidelines on the assessment of cardiovascular risk.\textsuperscript{15} The guidelines were based on a systematic review conducted by an expert panel appointed by the National Heart, Lung, and Blood Institute.\textsuperscript{16} The panel noted that lipoprotein(a) was considered a risk predictor, but its contribution to risk assessment “awaits further consideration at a later time.”

U.S. Preventive Services Task Force Recommendations

Not applicable.

Medicare National Coverage

There is no national coverage determination. In the absence of a national coverage determination, coverage decisions are left to the discretion of local Medicare carriers.

REFERENCES


**POLICY HISTORY - THIS POLICY WAS APPROVED BY THE FEP® PHARMACY AND MEDICAL POLICY COMMITTEE ACCORDING TO THE HISTORY BELOW:**

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<td>New policy</td>
<td>Policy updated with literature search, references updated, no change to policy statement.</td>
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<tr>
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<td>Policy updated with literature search. Adding references 11-13 and 18-20. No change to policy statement.</td>
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<td>December 2018</td>
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<td>December 2019</td>
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<td>Policy updated with literature review through August 14, 2019; no references added. Policy statement unchanged.</td>
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