Medical Policy

Cardiovascular Risk Panels

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Policy Number: 664
BCBSA Reference Number: 2.04.100

Related Policies
- Novel Lipid Risk Factors in Risk Assessment and Management of Cardiovascular Disease, #283
- Measurement of Lipoprotein-Associated Phospholipase A2 - Lp-PLA2- in the Assessment of Cardiovascular Risk, #558
- Ultrasonographic Measurement of Carotid Intima-Medial Thickness as an Assessment of Subclinical Atherosclerosis, #547
- Homocysteine Testing in the Screening, Diagnosis, and Management of Cardiovascular Disease, #016
- Genotyping for 9p21 Single Nucleotide Polymorphisms to Predict Risk of Cardiovascular Disease or Aneurysm, #340
- Gene Expression Testing to Predict Coronary Artery Disease, #349

Policy

Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity
Medicare HMO BlueSM and Medicare PPO BlueSM Members

Cardiovascular risk panels, consisting of multiple individual biomarkers intended to assess cardiac risk, are INVESTIGATIONAL.

Prior Authorization Information

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CPT Codes / HCPCPS Codes / ICD-9 Codes
The following codes are included below for informational purposes. Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement. Please refer to the member’s
contract benefits in effect at the time of service to determine coverage or non-coverage as it applies to an individual member.

Providers should report all services using the most up-to-date industry-standard procedure, revenue, and diagnosis codes, including modifiers where applicable.

CPT Codes
No specific CPT codes

Description
Cardiovascular risk panels refer to different combinations of cardiac markers that are intended to evaluate risk of cardiovascular (CV) disease. There are numerous commercially available risk panels that include different combinations of lipids, noncardiac biomarkers, measures of inflammation, metabolic parameters, and/or genetic markers. Risk panels report the results of multiple individual tests, as distinguished from quantitative risk scores that combine the results of multiple markers into one score.

Background
Cardiovascular disease remains the single largest cause of morbidity and mortality in the developed world. As a result, accurate prediction of cardiovascular risk is a component of medical care that has the potential to focus and direct preventive and diagnostic activities. Current methods of risk prediction in use in general clinical care are not highly accurate, and as a result there is a potential unmet need for improved risk prediction instruments.

Components of cardiovascular risk include family history, cigarette smoking, hypertension, and lifestyle factors such as diet and exercise. In addition, numerous laboratory tests have been associated with cardiovascular (CV) risk, most prominently lipids such as low-density lipoprotein (LDL) and high-density lipoprotein (HDL). These clinical and lipid factors are often combined into simple risk prediction instruments, such as the Framingham risk score (FRS). The Framingham risk score provides an estimate of the 10-year risk for developing cardiac disease and is currently used in clinical care to determine the aggressiveness of risk factor intervention, such as the decision to treat hyperlipidemia with statins.

Many additional biomarkers, genetic factors and radiologic measures have been associated with increased risk of CV disease. Over 100 emerging risk factors have been proposed as useful for refining estimates of cardiovascular risk. Some general categories of these potential risk factors are as follows:

- **Lipid markers.** In addition to LDL and HDL, other lipid markers may have predictive ability, including the apolipoproteins, lipoprotein (a), lipid subfractions, and/or other measures.
- **Inflammatory markers.** Many measures of inflammation have been linked to the likelihood of CV disease. High-sensitivity C-reactive protein (CRP) is one example of an inflammatory marker; others include fibrinogen, interleukins, and tumor necrosis factor.
- **Metabolic syndrome biomarkers.** Measures associated with metabolic syndrome, such as specific dyslipidemic profiles or serum insulin levels, have been associated with increased risk of CV disease.
- **Genetic markers.** A number of mutations associated with increased thrombosis risk, such as the MTHFR mutation or the prothrombin gene mutations, have been associated with increased CV risk. In addition, numerous single nucleotide polymorphisms (SNPs) have been associated with CV disease in large genome-wide studies.

CV risk panels may contain measures from one or all of the above categories, and may include additional measures not listed above such as radiologic markers (carotid CMT, calcium score). Some cardiovascular risk panels are relatively limited, including a few markers in addition to standard lipids. Others include a wide variety of potential risk factors from a number of different categories, often including both genetic and nongenetic risk factors. Other panels are composed entirely of genetic markers.

Some examples of commercially available CV risk panels are as follows:
Health Diagnostics Cardiac Risk Panel: MTHFR gene analysis, common variants; vitamin D, 1,25 dihydroxy; B-type natriuretic peptide (BNP); Lp-PLA2; myeloperoxidase; apolipoprotein; immune complex assay; lipoprotein, blood; electrophoretic separation and quantitation; very long chain fatty acids; total cholesterol; HDL; LDL; triglycerides; (high-sensitivity CRP, hsCRP); lipoprotein (a); insulin, total; fibrinogen; apolipoprotein analysis; multiple single-nucleotide polymorphisms (SNPs) associated with coronary artery disease (CAD).

Boston Heart Advanced Risk Markers Panel: small dense LDL, lipoprotein (a), apolipoprotein B, hsCRP, lipoprotein-associated phospholipase A2, homocysteine

Genova Diagnostics CV Health Plus Genomics™ Panel: apo E; prothrombin; factor V leiden; fibrinogen; HDL; HDL size; HDL particle number; homocysteine; LDL; LDL size; LDL particle number; lipoprotein (a); LP-PLA2; MTHFR gene; triglycerides, very low-density lipoprotein (VLDL); VLDL size; vitamin D; hs-CRP.

Metametrix Cardiovascular Health Profile: total cholesterol, HDL, LDL, triglycerides, lipoprotein (a), ferritin, fibrinogen, hsCRP, coenzyme Q, vitamin E, lipid peroxides, homocysteine, red blood cell (RBC) magnesium, insulin, testosterone, sex hormone-binding globulin, free androgen index.

Cleveland HeartLab CVD Inflammatory Profile: hs-CRP, urinary microalbumin, myeloperoxidase, Lp-PLA2, F2-isoprostanes.


Genetiks Genetic Diagnosis and Research Center Cardiovascular Risk Panel: factor V leiden, factor V R2, Prothrombin gene, factor XIII, fibrinogen -455, PAI-1, GPIIIs (HPA-1), MTHFR, ACE I/D, Apo B, Apo E.

Summary
Numerous cardiovascular (CV) risk panels are commercially available. These panels report results for multiple individual CV risk markers and have wide variability in the risk factors included in the panel. While the individual risk factors have in most cases been associated with increased risk of CV disease, it is not clear how the results of individual risk factors impact management changes, so it is also not certain how the panels will impact management decisions. Given the lack of evidence for clinical utility of any individual risk factor beyond simple lipid measures, it is unlikely that the use of CV risk panels improves outcome. As a result, the use of cardiac risk panels for predicting risk of CV disease is considered investigational.

Policy History

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Information Pertaining to All Blue Cross Blue Shield Medical Policies
Click on any of the following terms to access the relevant information:

Medical Policy Terms of Use
Managed Care Guidelines
Indemnity/PPO Guidelines
Clinical Exception Process
Medical Technology Assessment Guidelines

References