Commentary in *The American Journal of Medicine*
Reinforces the Value of the Corus CAD Test in Evaluating Symptomatic Patients
With Suspected Obstructive Coronary Artery Disease

REDWOOD CITY, Calif. – March 2, 2016 – CardioDx, Inc., a molecular diagnostics company specializing in cardiovascular genomics, announced today that a Commentary entitled *A Novel Diagnostic Approach for Evaluating Suspected Coronary Artery Disease* (CAD) appears in the March online issue of *The American Journal of Medicine* (AJM). The commentary by William E. Boden, M.D., FACC, FAHA, of Chief of Medicine, Samuel S. Stratton VA Medical Center, and Professor of Medicine at Albany Medical College, Albany, NY, highlights the inefficiencies in the current diagnostic pathway for chest pain patients with suspected CAD and the need to shift physician decision-making for this common clinical disorder from routine cardiology specialty referral to the primary care physician and practicing internist. Boden highlights the important role of the Corus CAD blood test in helping clinicians more efficiently and effectively rule out obstructive CAD (particularly in low-risk patients) as compared with the more traditional diagnostic pathway that typically results in more expensive, procedurally-directed management that may also pose potential risks to patients.

Corus CAD is the only commercially available blood test, incorporating age, sex and gene expression that provides a current assessment of obstructive CAD in non-diabetic patients with symptomatic chest discomfort. The Corus CAD test allows physicians to better risk stratify patients with obstructive CAD into low- and high-risk subsets, which permits more precise patient management that is tailored to the level of risk.

The diagnosis and management of suspected CAD is extremely resource- and labor-intensive and creates both a burden on emergency departments and challenges for outpatient practices. In the U.S. alone, the evaluation of suspected CAD is associated with millions of stress tests and angiograms yearly, which typically starts with patients being first seen in the outpatient (or primary care) setting. Importantly, of the patients presenting with symptoms, approximately 90% of those evaluated by primary care physicians (PCPs) are ultimately diagnosed with non-cardiac issues.[1]

“The time has come for a new diagnostic paradigm. The concern of avoiding a misdiagnosis that culminates in a cardiac event has created a management culture of reflex referral to cardiologists which, in turn, results frequently in over-testing and, in some cases, unnecessary procedures. We need to re-direct the initial evaluation of the low- to intermediate-risk patients back into the setting of internal medicine and primary care practice that would enable these physicians to play a more prominent role in the initial decision-making process,” said William E. Boden, M.D., FACC, FAHA, Samuel S. Stratton VA Medical Center. “To reinforce this point,” Boden says, “The NIH-funded PROMISE trial shines a light on how poorly we physicians perform in this regard. The study showed that 54% of patients who were referred to a cardiologist for coronary angiography didn’t need it. If we were to bring the diagnostic evaluation of such low-risk patients back into the PCP setting and utilize the Corus CAD test, we would more efficiently exclude low-risk patients from the sometimes risky and costly advanced cardiovascular diagnostic and therapeutic procedures that do not provide clinical benefit to otherwise low-risk patients.” For these reasons, Boden states that the test should be attractive to physicians, patients and payers alike.

"The ability to access and easily interpret this simple blood test makes Corus CAD a powerful diagnostic tool to help guide initial diagnostic decisions," adds Boden. "While tests involving gene expression are novel in cardiology, this type of testing has been used widely elsewhere. There is clearly an opportunity for physicians and managed care plans to embrace the Corus CAD test to provide the medical profession with a much-needed option for evaluating patients with suspected obstructive coronary artery disease."

"Dr. Boden's commentary in the AJM opens up an important discussion for those involved in the evaluation of suspected CAD patients, including all three parties - patients, physicians and payers," said Mark Monane, M.D., Chief Medical Officer of CardioDx. "CardioDx developed the Corus CAD test after hearing about the unmet needs in this area of primary care. The discussion in AJM describes these challenges and discusses a new diagnostic option for decision makers to use to improve patient care as well as health care resource utilization."

About Obstructive Coronary Artery Disease

CAD is a very common heart condition in the United States. One in seven deaths among Americans is caused by CAD.[2] CAD can cause a narrowing or blockage of the coronary arteries (vessels to the heart that supply the heart with blood, oxygen, and nutrients), reducing blood flow to the heart muscle. This narrowing or blockage in the coronary arteries is often referred to as obstructive CAD, characterized by the presence of atherosclerotic plaque.

About the Corus CAD Test

The Corus CAD blood test incorporates age, sex and gene expression measurements into a single score that indicates the current likelihood of obstructive CAD. Clinicians use the Corus CAD score, along with other clinical information, to determine whether further cardiac testing is necessary, which can help patients avoid unnecessary cardiac procedures. The test has been clinically validated in two prospective, multicenter U.S. studies, PREDICT and COMPASS.[3,4] In the COMPASS study, the Corus CAD test outperformed myocardial perfusion imaging (MPI) as a diagnostic tool to exclude obstructive CAD by demonstrating a higher negative predictive value (96% vs. 88%, $p<0.001$) than MPI for assessing the presence of obstructive CAD.[5]

About CardioDx

CardioDx, Inc., a molecular diagnostics company specializing in cardiovascular genomics, is committed to developing clinically validated tests that empower clinicians to better tailor care to each individual patient. Strategically focused on coronary artery disease, CardioDx is committed to expanding patient access and improving healthcare quality and efficiency through the commercialization of genomic technologies. Please visit www.cardiodx.com for additional information.

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* Obstructive CAD is defined as at least one atherosclerotic plaque causing ≥50% luminal diameter stenosis in a major coronary artery (≥1.5 mm lumen diameter) as determined by invasive quantitative coronary angiography (QCA) or coronary computed tomography angiography (CTA) (≥2.0 mm).

References

[1] Cayley WE. Diagnosing the Cause of Chest Pain. *Am Fam Physician*. 2005;72(10):2012-2021.
[2] Mozaffarian D, Benjamin EJ, Go AS, et al. On Behalf of the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart Disease and Stroke Statistics – 2015 Update: A Report from the American Heart Association. *Circulation*. 2015;131(4):e29-e322.
[3] Rosenberg S, Elashoff MR, Beineke P, et al. Multicenter Validation of the Diagnostic Accuracy of a Blood-Based Gene Expression Test for Assessing Obstructive Coronary Artery Disease in Nondiabetic Patients. *Ann Intern Med*. 2010;153:425-434.
[4] Thomas GS, Voros S, McPherson JA, et al. A Blood-Based Gene Expression Test for Obstructive Coronary Artery Disease Tested in Symptomatic Nondiabetic Patients Referred for Myocardial Perfusion Imaging: The COMPASS Study. *Circ Cardiovasc Genet*. 2013;6(2):154-162.
[5] The COMPASS study demonstrated that the Corus CAD algorithm has an NPV of 96% at the pre-specified threshold of 15 in a population of men and women referred to MPI.

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