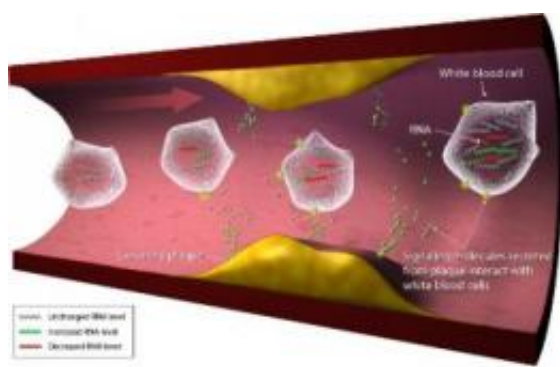


# Blood-based genomic test better than imaging test for ruling out obstructive coronary artery disease

November 15 2011

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The gene expression test measures changes in blood cell RNA levels that are sensitive to the presence of coronary plaque. Credit: CardioDx

A blood-based gene expression test was found to be more effective for ruling out obstructive coronary artery disease in stable symptomatic patients than myocardial perfusion imaging (MPI), a common test that uses a radioactive agent to evaluate the blood flow and function of the heart.

Study results were presented today at the [American Heart Association Scientific Sessions 2011](#) conference in Orlando, Fla.

"In this real-world patient population, the [gene expression](#) test demonstrates very high sensitivity and negative predictive value,

enabling clinicians to rule out patients who do not have obstructive [coronary artery disease](#) with high accuracy," said Dr. Gregory S. Thomas, clinical professor of medicine and director of nuclear cardiology education at the UC Irvine School of Medicine, who presented the findings. "The use of this test, followed by MPI for higher scores, may optimize diagnostic performance and utilization of health care resources."

Gene expression testing provides valuable tissue and cell-specific information about the [molecular mechanisms](#) involved in disease processes, enabling evaluation of an individual patient's disease state, activity, and/or progression at a given point in time. Unlike genetic tests, which measure genetic variations, mutations, traits and predispositions—factors that are constant over a person's lifetime—gene expression testing assesses a dynamic process, integrating both genetic predisposition and additional behavioral and environmental influences on current disease state.

The COMPASS study enrolled 537 stable patients with symptoms suggestive of [coronary artery](#) disease who had been referred to MPI at 19 U.S. sites. A blood sample was obtained in all patients prior to MPI, and gene expression testing was then performed, with study investigators blinded to gene expression test results. Following MPI, patients were referred either to invasive angiography or to CT angiography (CTA), gold-standard measurements for diagnosis of coronary artery disease. A total of 431 patients were eligible for analysis, having completed gene expression testing, MPI and either invasive angiography or CTA.

In the COMPASS study, the gene expression test was superior to MPI in diagnostic accuracy, sensitivity (89 percent vs. 27 percent, p

Citation: Blood-based genomic test better than imaging test for ruling out obstructive coronary

artery disease (2011, November 15) retrieved 23 April 2024 from  
<https://medicalxpress.com/news/2011-11-blood-based-genomic-imaging-obstructive-coronary.html>

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