

**The Diagnostic Yield of Coronary Angiography Remains Low, Despite Prior Myocardial Perfusion Imaging Testing, in Patients With Suspected Obstructive Coronary Artery Disease: Results of the PREDICT (Personalized Risk Evaluation and Diagnosis In the Coronary Tree) Trial**

**Meeting:**

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**Abstract:**

**Background:** Non-invasive and invasive diagnostic studies for evaluating coronary artery disease (CAD) are on the rise. We examined the diagnostic yield of coronary angiography in patients with suspected obstructive coronary artery disease (CAD+) who had already undergone myocardial perfusion imaging (MPI) testing in a subset of the PREDICT trial, which validated a gene expression score for the detection of CAD+.

**Methods:** The PREDICT trial was a prospective, multicenter study that enrolled patients referred for coronary angiography for the discovery, development, and validation of a gene expression score (GES) for the detection of obstructive CAD. Patients were referred for coronary angiography according to local practice, based on symptoms suggestive of CAD, high-risk clinical characteristics, and/or positive noninvasive stress test. In this subset, post-hoc analysis, evaluable non-diabetic patients were required to have both a MPI and coronary angiography. Local cardiologists interpreted CAD+ as left main disease  $\geq 50\%$  and/or epicardial coronary artery with  $\geq 70\%$  lumen obstruction.

**Results:** We evaluated 1418 patients who underwent MPI followed by clinical angiography. The patients had an average age of 60 and 48% were female. Approximately, 78.1% (1107/1418) of the patients had possible (12.7%) or definite (65.3%) ischemia on MPI (MPI+). The overall yield for CAD+ in the MPI+ subgroup based on site-read angiograms, was 27.6% (37.2% for men and 16.2% for women, p value  $<0.0001$ ).

**Conclusion:** In this observational study of patients referred for diagnostic angiography after MPI testing for suspected CAD, 72% of patients did not have obstructive CAD on invasive testing. This rate is higher than previously reported in the ACC Cardiovascular Data Registry. The yield was significantly lower in women versus men. In over 75% of cases, a positive MPI test drove referral to cardiac catheterization. Adoption of more discriminating non-invasive diagnostic tests with high negative predictive value is needed to rule-out patients and ultimately improve the overall diagnostic yield on coronary angiography.

**Reference:**

Lansky AJ, McPherson J, Ellis S, et al. The diagnostic yield of coronary angiography remains low, despite prior myocardial perfusion imaging testing, in patients with suspected obstructed coronary artery disease: Results of the PREDICT (Personalized Risk Evaluation and Diagnosis In the Coronary Tree) trial. *J Am Coll Cardiol*. 2012;59:E171.

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**Abstract Highlights:**

- The PREDICT Trial is a prospective multi-center study designed to develop and validate a blood-based gene expression test (Corus CAD) for the detection of obstructive CAD in non-diabetic stable symptomatic or high risk asymptomatic patients clinically referred for invasive coronary angiography. (Rosenberg S et al. *Ann Intern Med* 2010;153:425-434)
- The objective of this PREDICT subset analysis was to evaluate the diagnostic yield of invasive coronary angiography in the subgroup of patients in PREDICT (n=1418) who had undergone myocardial perfusion imaging (MPI) prior to referral for coronary angiography.
- This study found a low diagnostic yield at coronary angiography in patients who had undergone MPI testing for suspected CAD prior to invasive testing – 72% of patients did not have obstructive CAD. The diagnostic yield was significantly lower in women versus men.

Should you have any questions related to this study or abstract, please contact CardioDx Medical Affairs at [medicalaffairs@cardiodx.com](mailto:medicalaffairs@cardiodx.com) or 866-941-4996.