

## **Use of a Personalized Medicine, Gene Expression Score Influenced Decision Making Around Referral to Cardiology Among Female Patients Presenting to Primary Care with Symptoms Suggestive of Obstructive Coronary Artery Disease**

### **Meeting:**

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**Purpose:** Current clinical approaches to evaluating stable, non-acute patients presenting with symptoms suggestive of obstructive coronary artery disease (CAD) are costly and expose patients to risks of radiation and side effects from contrast dye. These risks are particularly concerning in women due to diagnostic confounders, high false positive rates, and exercise intolerance. We hypothesized that use of the gene expression score (GES) would improve clinicians' risk stratification of female patients considered for referral to cardiology.

**Method:** The prospective PRESET Registry (NCT01677156) is enrolling 1,000 stable, non-acute adults with no history of CAD from 21 US primary care, community-based practices. This previously validated gene expression diagnostic test has a 96% NPV to rule out obstructive CAD among symptomatic patients with no previous history of diabetes or myocardial infarction. Clinicians provide the pre- and post-GES evaluation plan for each patient. Data on demographics, clinical characteristics, and GES results (predefined as low [GES ≤15] or elevated [GES >15]) are being collected, as are cardiology referrals and all associated cardiac diagnostic tests performed.

**Result:** In the cohort of 393 patients to date, 199 patients (50.6%) were female. In this subgroup, the median age was 56 yrs and the median BMI was 29.1. The median GES was 8 (range, 1-40), and 156 patients (78.4%) had low scores. In this interim analysis of the female cohort, 18/156 (11.5%) patients with low scores were referred to cardiology, whereas 20/43 (46.5%) patients with elevated scores were referred (OR 6.6, p<0.0001). At 30 day follow-up, no major adverse cardiac events were reported among female patients with low scores.

**Conclusion:** In this community-based primary care patient registry assessing the impact of a personalized medicine, gene expression score on cardiac evaluation, initial results from the PRESET Registry show that the test was adopted into clinical practice and helped to classify female patients into low and elevated GES groups. The test showed clinical utility in influencing medical decision making on cardiology referrals among female patients, and preventing women at low risk for obstructive CAD from receiving unnecessary—and potentially harmful—additional diagnostic testing.

**Reference:** Ladapo JA, Sharp D, Maniet B, et al. Use of a Personalized Medicine, Gene Expression Score Influenced Decision Making Around Referral to Cardiology Among Female Patients Presenting to Primary Care with Symptoms Suggestive of Obstructive Coronary Artery Disease. *Med Decis Making*. 2015;35:E149.