7th Annual COVADIS Summit

Unifying Diagnostic Testing for Coronary Microvascular Dysfunction – Can We Develop a Universal *Invasive* Protocol?

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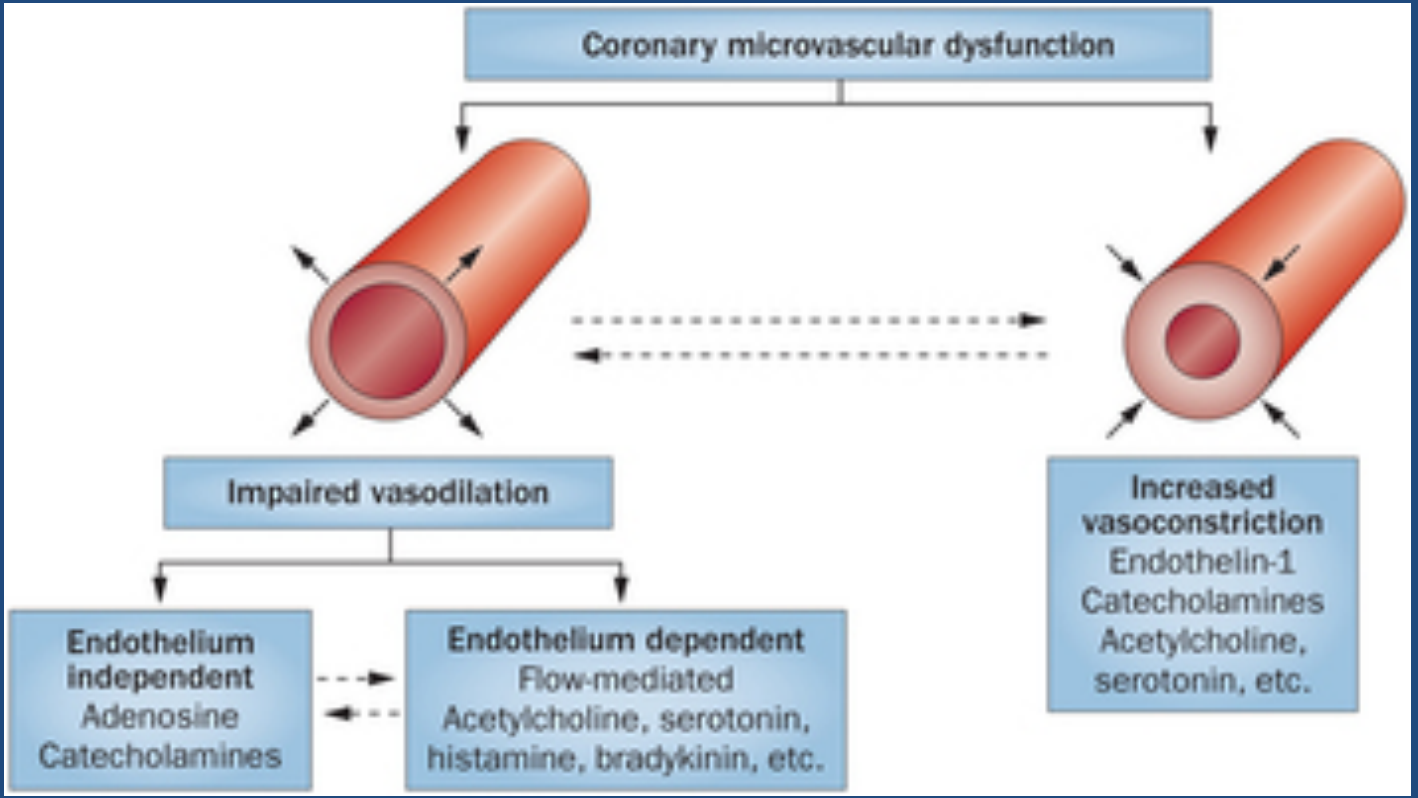
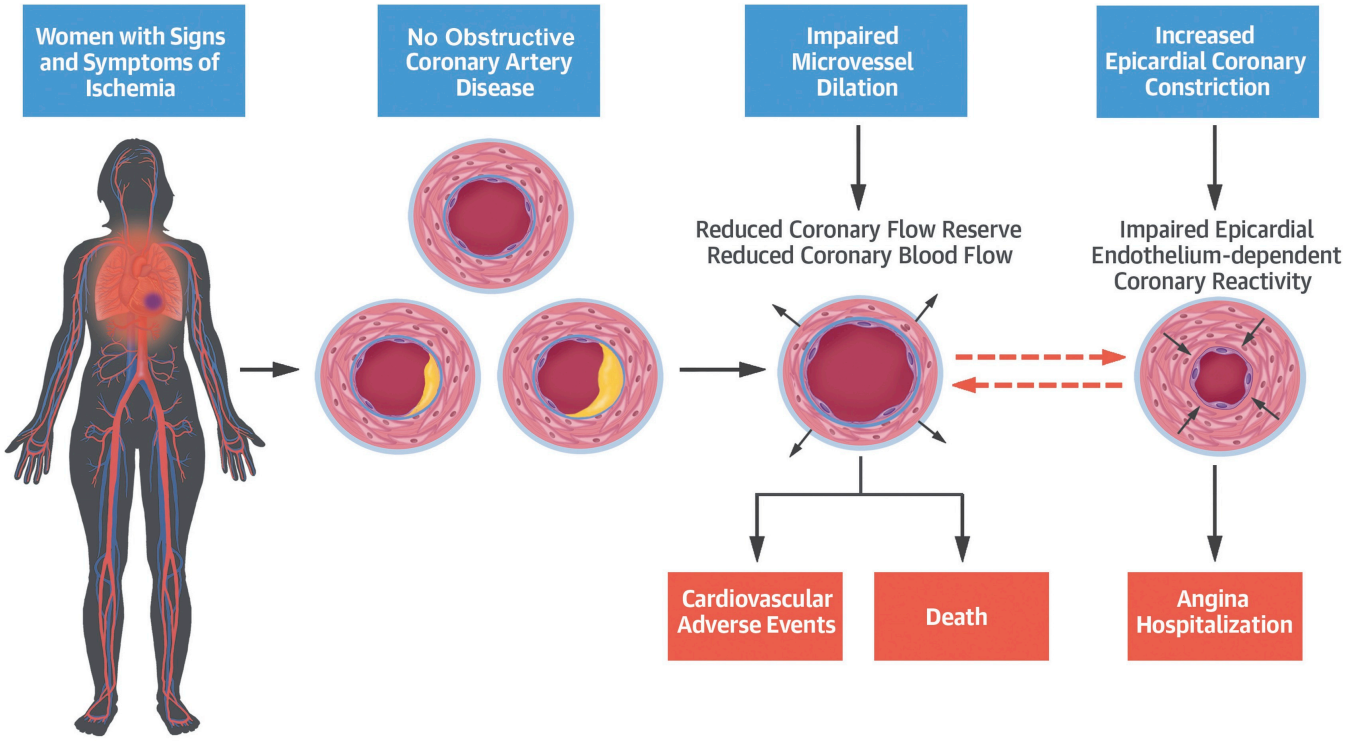
Coronary Microvascular Dysfunction



Crea, F, et al. Nature Reviews Cardiology. 2015;12:48–62.

CENTRAL ILLUSTRATION: Women With Signs and Symptoms of Ischemia With No Obstructive Coronary Artery Disease and the Potential Role of Coronary Reactivity Testing

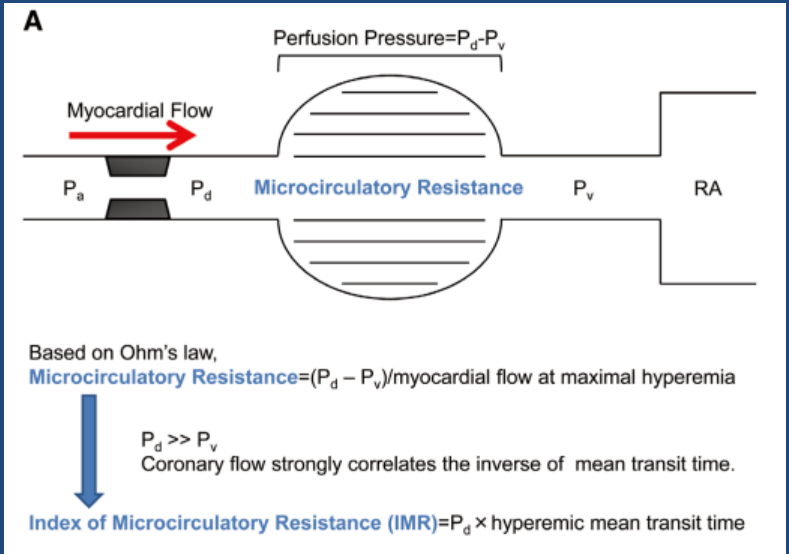


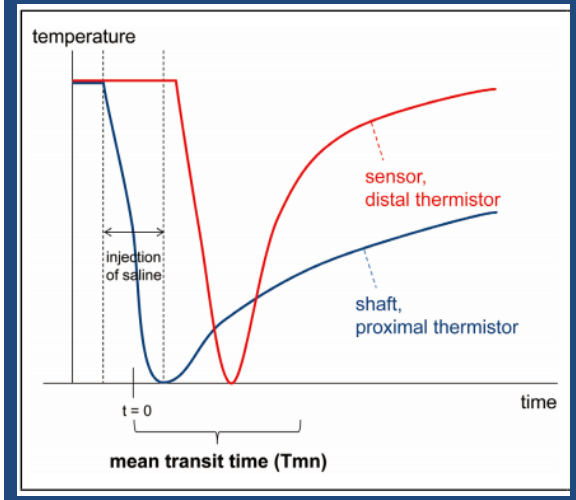
AlBadri, A. et al. J Am Coll Cardiol. 2019;73(6):684-93.

Coronary Reactivity Testing

1. Cath Lab with facilities to perform Quantitative Coronary Angiography
2. 0.014-inch FloWire for measurement of coronary blood velocity
3. ComboMap Pressure and Flow system
4. Adenosine 6 mcg/ml:
   18mcg x2, 36 mcg x2
5. Acetylcholine 10-6:
   0.182 mcg/ml at 48 ml/hr x 3 min=0.364 mcg
6. Acetylcholine 10-4:
   18.2 mcg/ml at 48 ml/hr x 3 min= 36.4 mcg
7. Acetylcholine 10-4 (spasm dose)
   18.2 mcg/ml at 120 ml/hr x 3 min= 108 mcg
8. Nitroglycerin 200 mcg

Index of Microcirculatory Resistance, IMR





- Pressure-temperature sensor guidewire advanced to distal LAD
- P_d= mean distal coronary pressure at maximal hyperemia
- 3 mL of room-temperature saline injected into LAD
- Microvascular dysfunction: IMR $\geq$ 25

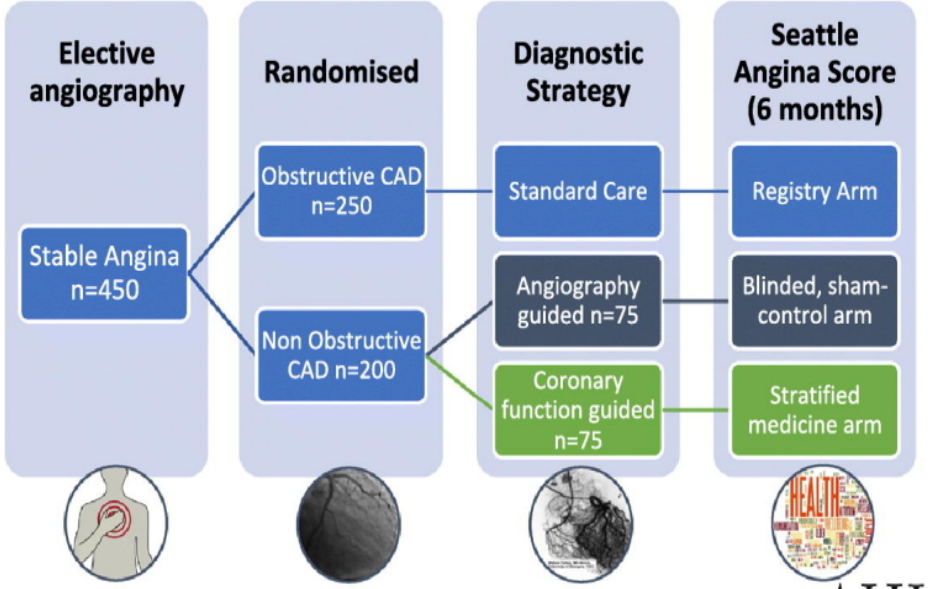
Fearon et al. Circulation 2003.

Randomized CRT Protocol Improves Angina Outcomes

The **BHF CorMicA** Study Design

Coronary **Mic**rovascular **A**ngina – a randomised clinical trial of stratified medicine

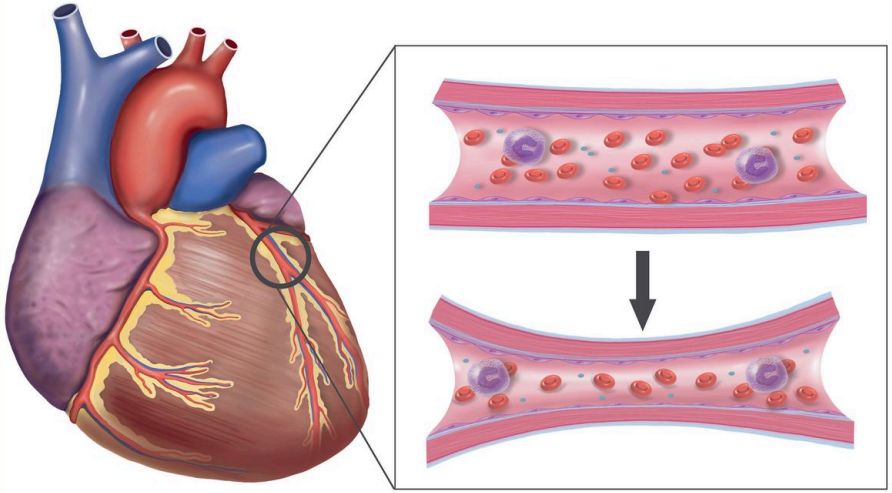
British Heart Foundation



Ford et al. *American Heart Journal. Nov 2017*

AHJ

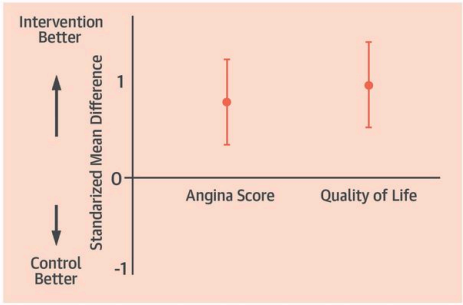
CENTRAL ILLUSTRATION: Invasive Coronary Function Testing in Angina: Study Design and Results



Stratified Medicine in Patients with INOCA:

- Microvascular Angina
- Vasopastic Angina
- Non-Cardiac Chest Pain

→ **Improved Angina and Quality of Life**



Ford, T.J. et al. J Am Coll Cardiol. 2018;72(23):2841-55.

Vision

- To develop and demonstrate feasibility/acceptability of Functional Coronary Angiography (FCA) among ischemia with no obstructive CAD (INOCA) and myocardial infarction with no obstructive CAD (MINOCA) patients at the point of care by busy interventional cardiologists.
- The project will generate data for protocol development for export to cath labs nationally and internationally for clinical care as well as research to improve our understanding conduct clinical trials to improve health outcomes in INOCA and MINOCA.

Aims

- To develop:
- A streamlined FCA protocol, results report and interpretation, and clinical treatment guideline
- An operational approach to deploy the protocol, report and guideline in patients undergoing clinically indicated coronary angiography by interventional cardiologists
- Data collection for FCA results and patient follow-up as well as feasibility and acceptability measures