

## Ischemia with Non-obstructive Coronary Arteries (INOCA)

Persistent chest pain syndromes will often culminate in a diagnostic coronary angiogram. This has been regarded as the definitive gold standard for the diagnosis, prognostication and treatment approach for subjects with chest pain. Over the past decade it has become increasingly apparent that many patients do not have obstruction in the epicardial coronary arteries. More than 50% of women and 25% of men present in this fashion. Whether they have ischemia documented on non-invasive testing (about 50%) or not, the preferred term for this condition is ischemia with non-obstructive coronary arteries (INOCA). About 75% of these subjects are women, and we have not done a great job as a cardiology community in adequately diagnosing or treating these women. More recent research has demonstrated a vasomotor abnormality in up to 80% of these subjects who undergo more detailed physiology testing. While very few laboratories in the world undertake coronary vasoreactivity testing, this is the preferred approach to understand this condition. A protocol that involves acetylcholine and adenosine infusion/bolus with the evaluation of the conduit vessel (quantitative coronary angiography) and microvascular function (with combined pressure and flow wire) is ideal. Coronary microvascular disease (CMD) will be documented in more than 50%, while large vessel endothelial dysfunction or diffuse vasospasm will be seen in a further 25%. Many patients have combined abnormalities. There are ongoing studies that will be reviewed that speak to the clinical advantage of such an approach to improve medication selection and the quality of life for these women. Non-invasive techniques to look for CMD will also be reviewed. INOCA is a very common entity and a practical approach to the diagnosis and treatment of these women should be a priority for those clinicians who deal with chest pain syndromes in women.