

Non-stenotic coronary lesion — is it really non-ischemic?

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Coronary angiography has a diagnostic limitation in identifying non-stenotic coronary lesion (NSCL) responsible for ischemia. Although an abnormal fractional flow reserve (FFR) increases the probability of significant obstructive lesions, it cannot reliably distinguish intermediate epicardial stenosis from ischemic, diffuse atherosclerosis or microvascular disease. Myocardial perfusion defects in patients (pts) with NSCL have often been unreasonably considered by invasive cardiologists to be "falsely positive".

We evaluated a prognostic value of gated single-photon emission computed tomography (SPECT) myocardial perfusion imaging (MPI) in unselected group of the pts with NSCL over a 24 month period of follow-up. 170 pts (115 males, 67.6%; aged 42-68; mean age 56.4±9.2 years) with NSCL (stenosis of 50% or less of left anterior descending artery and 70% or less of any other coronary artery or its major branches, FFR cut-off 0.80) were enrolled into the study. Retrospective analysis of 86 pts with NSCL and subsequent

positive MPS performed within 6 months from the time of coronary angiography (study group) and 84 pts with normal scan results (control group) was performed. The follow-up period lasted for 24 months from the time of MPI or up to the time of major coronary event (MCE) — first occurrence of cardiac death or myocardial infarction. Over a two-year follow-up, approximately 11% of the pts in the study group had MCE as compared to 3.2% in the control group (P <0.01). Abnormal MPI, EF <35% and high levels of hs-CRP were independent predictors for MCE in the study group. In multivariate analysis only an abnormal MPI remained to be an independent predictor regardless of the size or severity of perfusion abnormalities (P <0.005). Pts with NSCL on coronary angiography and myocardial perfusion defects have relatively high event rate (11%) of MCE over a period of 24 months from the time of MPI.

So, we highly recommend gated SPECT MPI to be performed in cases of NSCL to look for possible ischemia and to avoid life-threatening coronary complications in the forthcoming future. It can also prevent unnecessary repeatedly performed coronary interventions for identifying lesion responsible for angina in NSCL.

KEYWORDS: non-stenotic coronary lesion, ischemia, myocardial perfusion imaging.

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