Physiologic assessment for coronary artery disease with myocardial perfusion imaging is clinically more relevant when selecting diabetic with high risk features.

Authors:
F Shamoun1, DA Atwal1, AT Tseng1, SB Bhatt1, MG Girardo1, DL Liedl1, RA Arsanjani1, SU Unzek1, PW Wennberg1, 1Mayo Clinic Arizona - Scottsdale - United States of America,

On behalf: Mayo Clinic Arizona department of cardiovascular diseases

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Background: Based on previously published data, routine myocardial perfusion imaging in diabetics is not recommended. Selecting patients with diabetes and high risk cardiovascular features could be important to improve the yield of physiologic assessment of the coronary arteries disease and subsequently patient outcome.

Purpose: We posed the question whether nuclear stress testing has a better yield by selecting diabetic individuals with known vascular disease.

Methods: We analyzed records for 15,392 diabetics from 1996 to 2009 with and without vascular disease. Vascular disease is defined as carotid vascular disease, abdominal aortic aneurysm, or peripheral arterial disease. There was 2457 myocardial perfusion studies performed within 2 years of the vascular evaluation. We studied the results of these stress testing in each group and evaluated for the presence of myocardial ischemia. Multivariate Cox proportional regression was used to calculate hazard ratios (HR) with 95% confidence intervals after adjusting for age, gender.

Results: Of those who underwent myocardial perfusion studies 1819 were diabetic with vascular disease group A (mean age 67.8, 70.5% female) and 638 were diabetic without vascular disease group B (mean age 64.5 years, 67.1% female). There was at least one reversible defect suggest myocardial ischemia in 225 and 758 studies in group A and B respectively. Comparing outcome based on the presence of myocardial ischemia in group A without vascular disease, those with vascular disease did have an increased risk of myocardial infarction (adjusted HR: 1.630, 95% CI: 1.281-2.074) and death (adjusted HR: 1.646, 95% CI: 1.413-1.918).

Conclusion: Myocardial perfusion imaging is a reasonable test in patients with diabetes and vascular disease. The presence of myocardial ischemia is more common and is associated with worse cardiovascular outcome.