Prognostic value of normal myocardial perfusion imaging in asymphtomatic diabetic patients with moderate and high calcium score SCORE

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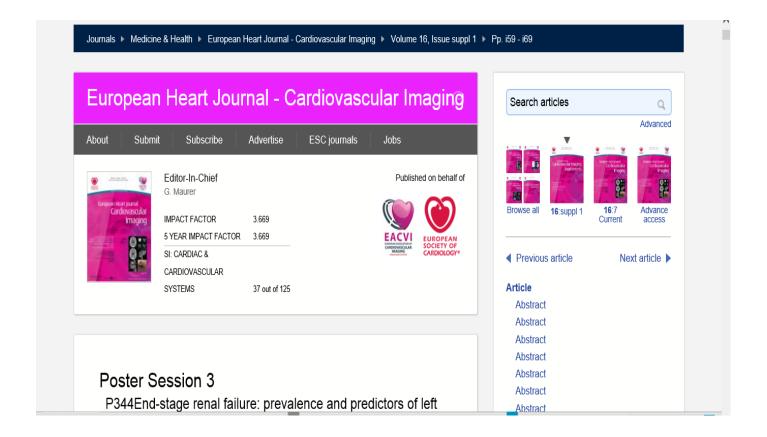Ss. Cyril and Methodius University
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Abstract

Background: To evaluate the intermediate prognostic value of normal myocardial perfusion imaging in asymptomatic diabetic patients with high cardiovascular (CV) risk with intermediate and high coronary calcium score (CAC).

Methods: 115 asymptomatic patients with high CV risk without known coronary artery disease (CAD), underwent SPECT myocardial perfusion imaging (MPI) after multislice computer tomography with coronary calcium score (CAC) assessment for detection of suspected CAD was. Presence of traditional risk factors, diabetes control and presence of albuminuria were evaluated. 75 patients with normal MPI results were included in the study. 17 segment model for myocardial perfusion and function analysis was used. Patients were devited in to three groups: I gr- 20 patients with diabetes duration between 1-5 years; II gr- 24 patients with diabetes duration 5-10 years; III gr- 31 patients with diabetes duration >10 years. End points (cardiac death, non fatal myocardial infarction, heart failure, new angina, revascularization) at 6 months, 1 and 2 years were followed.

Results: All patients have normal rest left ventricular function with EF >50% and normal myocardial perfusion scans. 40 patients had moderate calcification of the coronary arteries with average CAC 290+/-95. 35 patients had severe coronary calcification with average CAC 568+/-67. There was correlation of diabetes duration with CAC severity (r-0,62 for diabetes duration over 10 years). Only 3 cardiac events were registrated at 24 month follow up in the II and III group (new angina with percutaneous coronary (PCI) revascularization). Heard events (cardiac death, nonfatal myocardial infarction STEMI/NSTEMI) were 0% in gr I, 4.2% in gr II and 6.4% in Gr III. Overall rate of CV at 24 month follow up was 4.0%.

Conclusions: MPI and CAC are valuable techniques for preclinical assessment of CAD in asymptomatic high risk patients, which help guide optimal treatment decision and prognosis. Diabetic patients even with normal MPI have increased intermediate risk for CV events.