

# MYOCARDIAL VIABILITY ASSESMENT BY SPECKLE-TRACKING ECHOCARDIOGRAPHY IN PATIENTS WITH CORONARY ARTERY DISEASE & TYPE 2 DIABETES MELLITUS

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**Purposes:** to assess myocardial viability by speckle-tracking echocardiography (STE) in patients (pts) with coronary artery disease (CAD) and type 2 diabetes mellitus (DM2).

**Methods.** We examined 65 pts with CAD (45 males, age  $60.5 \pm 4.7$  years), among them 20 pts with T2DM. Baseline characteristics of pts included history of CAD ( $7.2 \pm 2.3$  years) and DM2 ( $4.7 \pm 0.5$ ). The presence and extent of CA lesion were performed using coronary angiography. Consecutive percutaneous coronary intervention (PCI) was performed to 32 pts, including 10 pts with DM2 (1<sup>st</sup> group (gr)) and 22 pts without concomitant DM2 (2<sup>nd</sup> gr). All pts underwent STE before and one year after PCI.

**Results.** Coronary angiography demonstrated that among pts with CAD and DM2 in 25% cases (n=5) registered atherosclerotic lesion of one CA and in 45% (n=9) lesion of two or three CA compared with the 40% (n=18) and 20% (n=9) respectively in pts with CAD without concomitant DM2 ( $p < 0.05$ ). Total of 312 LV myocardial segments were analyzed by STE. The number of abnormal segments that recovered function in the 1<sup>st</sup> gr was significantly lower than in the 2<sup>nd</sup> gr (27% (n=24) vs 35% (n=79),  $p < 0.05$ ). Assessing LV functional recovery one year after revascularization pts of the 1<sup>st</sup> gr demonstrated lower end-systolic longitudinal (LongS, %), radial (RadS, %) and circumferential (CircS, %) strains (LongS -  $9.3 \pm 6.2$  vs  $-12.7 \pm 6.7$ ,  $p = 0.033$ ; RadS  $16.3 \pm 10.8$  vs  $22.5 \pm 11.7$ ,  $p = 0.026$ ; CircS -  $8.2 \pm 7.9$  vs  $-12.3 \pm 8.5$ ,  $p = 0.043$ ) than in the 2<sup>nd</sup> gr (LongS  $-11.8 \pm 7.2$  vs  $-14.3 \pm 7.3$ ,  $p = 0.015$ ; RadS  $19.8 \pm 12.4$  vs  $23.5 \pm 11.3$ ,  $p = 0.025$ ; CircS  $-9.8 \pm 8.7$  vs  $-12.5 \pm 8.1$ ,  $p = 0.021$ ).

**Conclusions:** pts with CAD and DM2 had lesser degree of LV functional recovery one year after revascularization compared to those without DM2 that can be explained by peculiarities of CA atherosclerotic lesion. Assessments of LV myocardial viability using STE is recommended for pts selection before revascularization and further follow up.