

## ACUTE CORONARY SYNDROMES

# Metformin not associated with improved left ventricular function after STEMI in patients without diabetes mellitus

Metformin is often used in the treatment of patients with diabetes mellitus, and has been associated with improved left ventricular (LV) function after myocardial infarction in these patients. Animal studies have indicated that metformin might help to preserve LV function through effects that are independent of glycometabolic state. Therefore, in the randomized, controlled GIPS-III trial, the effect of metformin on LV function after STEMI was assessed for patients who do not have diabetes.

All 380 included patients had successfully undergone primary PCI. Patients received their first dose of study drug a median 100 min (for placebo) or

102 min (for metformin) after PCI. In both treatment groups, median exposure of patients to study drug (placebo or 500 mg metformin twice daily) was 124 days.

Metformin was not associated with improved LV function, as assessed via MRI in 271 patients 4 months after STEMI (LV ejection fraction 53.1% in the metformin group vs 54.8% for controls,  $P=0.10$ ). No differences in NT-proBNP levels or major adverse cardiac events were observed between the two treatment groups at 4 months, nor were there any differences in creatinine, glucose, or HbA<sub>1C</sub> levels.

The investigators conclude that “because LV function is currently regarded as the most important predictor of morbidity and

mortality after STEMI, it is unlikely that metformin will have a significant effect on long-term outcome after STEMI in patients without diabetes.” However, Dr Chris Lexis, who presented the findings at the 2014 ACC Scientific Sessions, points out “it is noteworthy that metformin started early after heart attack did not adversely affect kidney function and was well tolerated. So, our findings do not preclude the use of metformin to treat diabetes in this setting.”

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**Original article** Lexis, C. P. H. et al. Effect of metformin on left ventricular function after acute myocardial infarction in patients without diabetes: the GIPS-III randomized clinical trial. *JAMA* doi:10.1001/jama.2014.3315