

# Metformin does not improve heart function in patients without diabetes

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Although some research has suggested that metformin, a medication often used in the treatment of diabetes, may have favorable effects on ventricular (heart) function, among patients without diabetes who underwent percutaneous coronary intervention (PCI; a procedure such as stent placement used to open narrowed coronary arteries) for ST-segment elevation myocardial infarction (STEMI; a certain pattern on an electrocardiogram following a heart attack), treatment with metformin did not result in improved ventricular function, according to a *JAMA* study released online to coincide with its presentation at the 2014 American College of Cardiology Scientific Sessions.

Treatment for STEMI includes immediate treatment with anticlotting medications and PCI to restore [coronary blood flow](#). STEMI results in left ventricular dysfunction (decreased pump function) in up to 50 percent of patients, and approximately 20 percent to 40 percent of patients develop heart failure sometime after STEMI; heart failure after STEMI is associated with a 3 to 4 times higher risk of death. Left ventricular dysfunction is regarded as the strongest predictor for adverse outcome after STEMI, according to background information in the article.

Chris P. H. Lexis, M.D., of the University of Groningen, Groningen, the Netherlands, and colleagues randomly assigned 380 patients who underwent PCI for STEMI to receive [metformin](#) hydrochloride or placebo twice daily for 4 months to determine whether metformin helps preserve left ventricular function after STEMI in patients without

diabetes. Left ventricular ejection fraction (a measure of how well the left ventricle of the heart pumps blood with each contraction) was assessed by magnetic resonance imaging.

Left ventricular ejection fraction 4 months after beginning the study did not differ between the metformin group (53.1 percent) and the placebo group (54.8 percent). In addition, N-terminal pro-brain natriuretic peptide level (a cardiac biomarker) was not different between the 2 groups.

Major adverse cardiac events were observed in 6 patients (3.1 percent) in the metformin group and in 2 patients (1.1 percent) in the [placebo group](#).

"Because [left ventricular](#) 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," the authors write.

"The present findings do not support the use of metformin in this setting."

**More information:** [DOI: 10.1001/jama.2014.3315](https://doi.org/10.1001/jama.2014.3315)

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