Taylor & Francis
Taylor & Francis Group

Acta Cardiologica

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/tacd20

The effect of nicorandil on cardiac function and clinical outcomes in ST-segment elevation myocardial infarction patients undergoing primary percutaneous coronary intervention: a randomised trial

Mesut Gitmez & Patrizio Lancellotti

To cite this article: Mesut Gitmez & Patrizio Lancellotti (2023): The effect of nicorandil on cardiac function and clinical outcomes in ST-segment elevation myocardial infarction patients undergoing primary percutaneous coronary intervention: a randomised trial, Acta Cardiologica, DOI: 10.1080/00015385.2023.2209441

To link to this article: https://doi.org/10.1080/00015385.2023.2209441

Published online: 12 May 2023.

ACTA CARDIOLOGICA
https://doi.org/10.1080/00015385.2023.2209441

LETTER TO THE EDITOR

The effect of nicorandil on cardiac function and clinical outcomes in ST-segment elevation myocardial infarction patients undergoing primary percutaneous coronary intervention: a randomised trial

Dear Editor,

I read with great interest the article by Choe JC et al. titled 'The effect of nicorandil on cardiac function and clinical outcomes in ST-segment elevation myocardial infarction patients undergoing primary percutaneous coronary intervention: a randomised trial' published in Acta Cardiologica. The study aimed to investigate the effect of nicorandil treatment for 6 months on infarct size, cardiac function as determined by cardiac magnetic resonance imaging (CMR), and clinical outcomes in ST-segment elevation myocardial infarction (STEMI) patients undergoing primary percutaneous coronary intervention (PCI). The study found that nicorandil treatment did not improve these parameters in STEMI patients [1].

This study has a prospective, randomised, controlled design, which is a strength as it reduces selection bias and confounding. It also uses CMR to measure infarct size and cardiac function, which is a precise and accurate method. Moreover, it compares different routes of administration of nicorandil (intravenous, intracoronary, and oral) and evaluates the long-term effect of the drug for 6 months. However, the study also has some limitations. The sample size is small ($n = 83$), which limits the statistical power and the generalisability of the results. The study only includes STEMI patients, which does not reflect the efficacy of nicorandil in other types of angina or ischaemic heart disease. The study does not investigate the mechanism or biomarkers of nicorandil, which does not explain how the drug exerts its cardioprotective role. The study also lacks adequate data on the safety and tolerability of nicorandil, which ignores the potential side effects and contraindications of the drug.

There are many studies in the literature on clinical outcomes and predictors of patients with ST-segment elevation myocardial infarction [2,3]. The results of this study are inconsistent with some previous studies. For example, Hahn JY et al. (2022) conducted a randomised trial showing that 6 months of P2Y12 inhibitor monotherapy was noninferior to 12 months or longer of dual antiplatelet therapy (DAPT) in terms of cardiac and cerebrovascular events in patients with acute coronary syndrome after PCI. In this study, DAPT was administered for 6 months in the nicorandil group. The results suggest that nicorandil combined with DAPT may improve cardiovascular outcomes after PCI. However, this study had a larger sample size ($n = 2993$) and evaluated different outcomes than the current study [4].

On the other hand, Qian G et al. (2019) conducted a study that showed administration of nicorandil prior to primary PCI reduces infarct size and improves cardiac function in patients with STEMI. In this study, the infarct size was significantly smaller in the nicorandil group than in the placebo group (18.4 vs 23.7%, $p < 0.001$). Additionally, left ventricular ejection fraction and wall motion score were significantly higher in the nicorandil group than in the placebo group (60.8 vs 56.9%, $p < 0.001$; 1.3 vs 1.5, $p < 0.001$). This study supports the cardioprotective effect of nicorandil. However, this study also had a small sample size ($n = 100$) and did not evaluate long-term outcomes [5].

Based on these studies, it is still unclear what effect nicorandil has on cardiac function and clinical outcomes after PCI in STEMI patients. Larger, long-term, multicentre randomised controlled studies are needed to fully understand the effects of nicorandil on these outcomes. Additionally, further research is needed to investigate the mechanism and biomarkers of nicorandil.

Thank you for publishing this article. I pay my respects to the authors of the work.

Kind regards,

ORCID

Mesut Gitmez http://orcid.org/0000-0003-1078-9095

References

[1] Choe JC, Oh J-H, Lee HC, et al. The effect of nicorandil on cardiac function and clinical outcomes in ST-segment elevation myocardial infarction patients undergoing primary percutaneous coronary intervention: a randomised trial. Acta Cardiol. 2023:1–9.

[2] Şaylık F, Akbulut T. The association of PRECISE-DAPT score with thrombus burden in patients with ST-segment elevation myocardial infarction. Acta Cardiol. 2022;77(5):449–455.

[3] Güler A, Gürbak İ, Panç C, et al. Frequency and predictors of no-reflow phenomenon in patients with COVID-19 presenting with ST-segment elevation myocardial infarction. Acta Cardiol. 2022;77(4):313–321.

[4] Hahn J-Y, Song YB, Oh J-H, SMART-DATE İnvestigators, et al. 6-month versus 12-month or longer dual antiplatelet therapy after percutaneous coronary intervention in patients with acute coronary syndrome (SMART-DATE): a randomised, open-label, non-inferiority trial. Lancet. 2018;391(10127):1274–1284.

[5] Qian G, et al. Effects of nicorandil administration on ınfarct size in patients with ST-segment-elevation myocardial ınfarction undergoing primary percutaneous coronary ıntervention: the CHANGE trial. Circ Cardiovasc Interv. 2019;12(11):e008233.

Mesut Gitmez
Batman Eğitim ve Araştırma Hastanesi: Batman Egitim ve Arastirma Hastanesi, Batman Merkez/Batman, Turkey
drmesutgitmez@gmail.com

Patrizio Lancellotti
CHU de Liege – Hopital du Sart Tilman, Liège, Belgıum

Received 18 April 2023; Revised 20 April 2023; Accepted 25 April 2023