Beta-Blockers after Myocardial Infarction and Preserved Ejection Fraction

John G.F. Cleland, M.D.

John J.V. McMurray, M.D.

University of Glasgow, Glasgow, United Kingdom

Nick Freemantle, Ph.D.

University College London, London, United Kingdom

In the REDUCE-AMI (Randomized Evaluation of Decreased Usage of Beta-Blockers after Acute Myocardial Infarction) trial reported by Yndigegn et al. (April 18 issue),1 5020 patients with an acute myocardial infarction and a left ventricular ejection fraction of at least 50% who had undergone coronary revascularization were randomly assigned to receive a beta-blocker or no beta-blocker. The annual rate for the primary end point (new acute myocardial infarction or death from any cause) was 2.5% for patients assigned to no beta-blocker, approximately one third of that predicted. Enrollment was predominantly from the SWEDEHEART (Swedish Web System for Enhancement and Development of Evidence-based Care in Heart Disease Evaluated According to Recommended Therapies) registry, which included approximately 75,000 patients during the course of the REDUCE-AMI trial.2 It is unclear how many patients were excluded by the protocol, but the low event rate suggests that investigators were cautious about whom they invited. Accordingly, the results of the REDUCE-AMI trial should be extrapolated with caution to clinical practice.

The authors suggest that metoprolol and bisoprolol are the best-documented beta-blockers after acute myocardial infarction. However, there is no substantial long-term randomized trial of bisoprolol in this context, and the largest trials of metoprolol were either neutral or abandoned for futility.3,4 Unfortunately, none of the remaining four trials investigating the use of beta-blockers after acute myocardial infarction mandate using the nonselective agents that have been shown to be effective.3,5

1. Yndigegn T, Lindahl B, Mars K, et al. Beta-blockers after myocardial infarction and preserved ejection fraction. N Engl J Med 2024;390:1372-1381.
2. SWEDEHEART annual report 2023 (https://www.ucr.uu.se/swedeheart/dokument-sh/arsrapporter-sh).
3. Freemantle N, Cleland J, Young P, Mason J, Harrison J. β Blockade after myocardial infarction: systematic review and meta regression analysis. BMJ 1999;318:1730-1737.
4. Chen ZM, Pan HC, Chen YP, et al. Early intravenous then oral metoprolol in 45,852 patients with acute myocardial infarction: randomised placebo-controlled trial. Lancet 2005;366:1622-1632.
5. Steg PG. Routine beta-blockers in secondary prevention — on injured reserve. N Engl J Med 2024;390:1434-1436.