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Commentary: Equality does not equal quality

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The optimal timing of coronary artery bypass grafting (CABG) in acute myocardial infarction (AMI) continues to be debated.¹⁻³ It remains unclear whether the clinical judgment of surgeons regarding CABG timing provides any benefit to patients. The purported advantages of earlier intervention are related to revascularization and salvage of ischemic, at-risk viable myocardium. However, earlier CABG also exposes the patient to stressors (eg, crossclamping of the aorta and cardioplegic arrest) that might exacerbate the injury to myocardium that has not yet stabilized, thus increasing operative mortality. Current guidelines are essentially agnostic.

In this issue of the *Journal*, Bianco and colleagues⁴ describe a propensity score–weighted analysis of 2058 patients who underwent CABG following AMI in their institution, 14% of whom underwent “early” surgery (ie, within 24 hours of presentation). They conclude that “late” surgery (after 24 hours) was not associated with any significant advantage in operative mortality or long-term incidence of readmission due to major adverse cardiac and cerebrovascular events. Separate subgroup analyses for patients with non–ST-segment elevation myocardial infarction and ST-segment elevation myocardial infarction yielded similar results.

This study is unlikely to conclusively settle the debate on its own, and one reason is that the inclusion criteria may have been too broad. Among patients with AMI being considered for CABG, the timing of surgery is debatable in some patients but also relatively clear-cut in others. For example, life-threatening hemodynamic instability would in most cases prompt emergent intervention, whereas a

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Lack of difference in outcomes between early versus delayed CABG after acute myocardial infarction does not imply lack of impact or importance of clinical judgment.

recent hemorrhagic stroke would in general encourage delaying of exposure to cardiopulmonary bypass and systemic heparinization. Although it is beyond the scope of this study to define such clear-cut clinical scenarios, the inclusion of such patients will undoubtedly impact the outcomes in both the “early” and “late” CABG cohorts and thus distort the comparison of patients in whom timing is truly an open question.

Nevertheless, given the similar outcomes in the “early” and “late” cohorts presented here, and the fact that these cohorts are essentially defined by clinical judgment, the reader might be inclined to conclude that clinical judgment regarding CABG timing has no impact on outcomes. This would be a major misinterpretation: the impact of clinical judgment regarding CABG timing should be assessed not by measuring whether outcomes in the “early” and “late” cohorts are *equal* to each other but rather by measuring whether overall *quality* of care for all patients with AMI requiring CABG has been improved in general. In other words, reducing operative mortality in the “early” CABG cohort by delaying surgery in patients deemed to be high-risk is not necessarily helpful if those mortalities are simply transferred over to the “late” cohort.

The impact of clinical judgment in this particular study is difficult to ascertain, but the favorable overall outcomes experienced by the patients described here suggest that they have benefited from judicious clinical decision-making. We would

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like to congratulate the authors on their careful analysis of one of the largest single-center cohorts published on this important topic as well as providing excellent day-to-day patient care at the bedside.

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Commentary: Coronary artery bypass grafting after acute myocardial infarction: Sound clinical judgment still prevails

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Despite numerous studies having focused on the outcomes of coronary artery bypass grafting (CABG) in the setting of acute myocardial infarction (AMI)—denoting a greater operative risk for emergency CABG compared with elective CABG—the optimal timing of surgical revascularization after AMI remains controversial. In this article, Bianco and colleagues¹ report on a single-center, retrospective series that compared the short- and long-term outcomes of patients who underwent isolated CABG within 24 hours and after 24 hours from the onset of AMI. The interest of this study relates to its sizable cohort, comprising 2058 patients operated between 2011 and 2017, and the length of follow-up, with a median of approximately 2 years. The authors compared the clinical outcomes of 292 patients who underwent CABG <24 hours and 1766 patients who had CABG

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Contrary to long-held belief, this new study suggests that delaying surgical revascularization after acute myocardial infarction may not be desirable in all cases. However, further analyses will be required to confirm those conclusions.

≥24 hours after the onset of AMI. Although the perioperative mortality of unadjusted patient cohorts was significantly greater in the <24 hours group, there was no such difference after risk adjustment by propensity matching. The authors concluded that delaying surgical revascularization to increase patient stability after AMI may not always be beneficial.

The study has limitations that must be considered before this observation guides mainstream clinical practice. First, patients who underwent CABG within 24 hours were probably assumed to have greater mortality risk due to their increased level of acuity, resulting in confounding by indication through the selection of patients whose upfront risk may have been “worth it.” Although propensity matching

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