 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 colleagues 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 ≥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
can limit those differences, it cannot account for all potential confounders or treatment allocation biases. Conversely, a patient whose CABG was deferred by ≥24 hours may have had other comorbidities that halted emergency surgery.

In this study, the grading of how stable a patient was versus how much ischemia and territory at risk was present was not well defined, and failure to have done this makes comparison between the groups difficult. Surgeons often use this intricate balance to determine whether a given patient should undergo CABG now or wait for the clinical status to stabilize and the action of platelet inhibitors to abate.

The relevance of a 24-hour cutoff in this study also needs validation. Previous work by Lee and colleagues²,³ and Weiss and colleagues⁴ reported outcomes differences using cutoffs between 6 hours and 3 days post-AMI, respectively. Therefore, other subdivisions around the timing of revascularization could have revealed outcome differences in the present study. Further, patients who died before surgical revascularization or who eventually became too sick to undergo CABG were not captured.

In the future, novel approaches such as the use of serological markers including troponin and C-reactive protein may help define the appropriate timing of surgical intervention.⁵,⁶ Until a randomized trial addressing this question takes place, sound clinical judgment and retrospective studies such as the present work will continue to form the rationale basis around defining the optimal timing of CABG after AMI.

References