

ejection fractions (EFs) of 40% to 49% that are, by definition, abnormal. Excluding borderline abnormal EFs from systolic heart failure leads to a more homogeneous population wherein management is substantially evidence-based. However, including borderline abnormal EFs in PSF renders the terminology self-contradictory, because systolic function is normal in diastolic heart failure (2). Rather than imposing a definition, if the authors query the frequency distribution of EFs is there a bimodal curve? Where are the peaks; what are the distributions? Is there significant overlap? What percent fall into the 40% to 49% range? Are these patients similar to patients with systolic dysfunction; with diastolic heart failure (EFs $\geq 50\%$), such that the concept of normal left ventricular function needs to be revisited; or best considered in a gray zone, such that they cannot be placed into either group at this time?

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Effect of Door-to-Balloon Time on Patient Mortality

The study by McNamara et al. (1) from the National Registry of Myocardial Infarction (NRFMI) found that door-to-balloon time (DBT) was strongly associated with mortality in both high- and low-risk patients and in patients presenting early or late after the onset of symptoms. These findings differ from our analyses from a large randomized trial and a single-center registry, both of which found that DBT impacts mortality primarily in high-risk patients and in those presenting early after the onset of symptoms (2,3).

Several possible explanations account for these differences. Prolonged DBT may be confounded with other unmeasured variables that impact mortality. First, DBT may be a surrogate for quality of care—hospitals with long DBTs may provide suboptimal treatment. Data from single-center registries and randomized trials would be less likely to have this bias. Second, NRFMI data on time from symptom onset to presentation collected from retrospective chart reviews may be unreliable because the time of symptom onset is often not documented in hospital charts. This is less of a problem in randomized trials or carefully constructed prospective registries. Finally, and perhaps most importantly, prolonged DBTs often reflect the underlying severity of illness, with “sicker” patients requiring longer time for evaluation, stabilization, or treatment of complications prior to percutaneous coronary intervention (PCI) (e.g., cardiopulmonary resuscitation,

intubation, defibrillation, or insertion of temporary pacemakers or intra-aortic balloon pumps). These confounding variables are rarely accounted for in large registries, including NRFMI.

In addition, the findings by McNamara et al. (1) that DBT affects mortality even in patients presenting late contradict the widely held paradigm regarding the time-sensitivity of reperfusion therapy originally demonstrated by Reimer et al. (4) and recently re-emphasized by Gersh et al. (5).

This issue is more than academic. We believe that an excessive emphasis on minimizing DBT as the overriding quality-of-care measure by hospitals, insurers, and regulators (and guidelines committees) may at times detract from optimal patient care. Rushing to perform primary PCI before stabilizing unstable patients may lead to laboratory complications and worse clinical outcomes. Indiscriminate treatment with fibrinolytic therapy of ST-segment elevation myocardial infarction patients presenting at noninterventional hospitals, rather than transferring appropriate patients for primary PCI, deprives these patients of the benefits of higher rates of reperfusion, less reinfarction, less intracranial hemorrhage, and in many cases lower mortality. A recent meta-analysis of randomized trials with primary PCI versus fibrinolysis has shown primary PCI reduced mortality even with treatment delays up to 2 h (6). Decisions regarding triage of patients for primary angioplasty should thus be based on an assessment of time and risk, and should utilize common sense. High-risk patients presenting early after the onset of symptoms with long delays to primary PCI are probably best treated with fibrinolytic therapy. Most other patients are best treated with transfer for primary PCI despite longer treatment delays.

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