

Most heart-attack patients needing procedure at another hospital not transferred in recommended time

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Only about 10 percent of patients with a certain type of heart attack who need to be transferred to another hospital for a PCI (procedures such as balloon angioplasty or stent placement used to open narrowed coronary arteries) are transferred within the recommended time of 30 minutes, according to a study in the June 22/29 issue of *JAMA*.

"Primary [percutaneous coronary intervention](#) is the preferred method of [reperfusion](#) for patients with ST-segment elevation [myocardial infarction](#) [STEMI; a certain pattern on an [electrocardiogram](#) following a heart attack], yet approximately 75 percent of hospitals in the United States currently do not have acute PCI capability. Patients with STEMI who present initially to these STEMI referral hospitals are frequently transferred to a STEMI receiving hospital for primary PCI," according to background information in the article. "Most important, the duration of time from arrival to discharge at the first hospital (i.e., the door-in to door-out [DIDO] time) is largely unknown. Furthermore, patient characteristics related to substantial delays in DIDO time, as well as the effect of this initial delay on subsequent treatment and outcomes, are also uncertain." The DIDO measure is increasingly being advocated as an important metric of processes of care to expedite reperfusion, and a national benchmark of less than 30 minutes has been recommended.

Tracy Y. Wang, M.D., M.H.S., M.Sc., of Duke University Medical Center, Durham, N.C., and colleagues conducted a study to examine the

time to reperfusion and [patient outcomes](#) associated with a DIDO time of 30 minutes or less. The study included data on 14,821 patients with STEMI transferred to 298 STEMI receiving centers for primary PCI in the Intervention Outcomes Network Registry (ACTION) Registry-Get With the Guidelines between January 2007 and March 2010.

Among the STEMI patients in the study transferred to a STEMI receiving hospital for primary PCI, the median (midpoint) DIDO time was 68 minutes. Only 1,627 patients (11 percent) had a DIDO time of 30 minutes or less; 56 percent had a DIDO time of greater than 60 minutes and 35 percent had a DIDO time of greater than 90 minutes. Independent patient characteristics associated with a DIDO time greater than 30 minutes included older age, female sex, off-hours presentation, and nonemergency medical services transport to the first hospital.

The researchers found that patients with a DIDO time of 30 minutes or less were more likely to undergo primary PCI after arriving at the STEMI receiving hospital compared with patients with a DIDO time greater than 30 minutes (95.9 vs. 90.5 percent). Overall door-to-balloon (DTB) time was significantly shorter for patients with a DIDO time of 30 minutes or less compared with those with a DIDO time greater than 30 minutes (median [midpoint], 85 vs. 127 minutes). The percentage of patients with an overall DTB time of 90 minutes or less was significantly higher for patients with a DIDO time of 30 minutes or less compared with those with a DIDO time greater than 30 minutes (60 percent vs. 13 percent); similar results were observed for the percentage of patients achieving an overall DTB time of 120 minutes or less.

During the study period, the researchers observed a 5.5 percent in-hospital mortality rate that was significantly higher among patients with a DIDO time greater than 30 minutes (5.9 percent) compared with patients who had a DIDO time of 30 minutes or less (2.7 percent).

"DIDO time is a new reperfusion performance measure for patients with STEMI who require interhospital transfer for primary PCI. Our study shows that patients with a DIDO time of 30 minutes or less are more likely to achieve an overall DTB time of less than 90 minutes and are associated with lower risk-adjusted mortality compared with patients who had a DIDO time greater than 30 minutes, thus affirming the importance of DIDO time as a metric for reperfusion quality. Significantly, the majority of transferred patients with STEMI nationwide do not meet the recommended 30-minute benchmark, suggesting that further attention and improvement of this performance measure will translate into substantial improvement in the timeliness of primary PCI and clinical outcomes for transferred STEMI patients," the authors write.

More information: *JAMA*. 2011;305[24]2540-2547.

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