Acute Coronary Syndromes

Mean Time to Reperfusion Is 63 Minutes in ‘Code STEMI’

BY BRUCE JANCIN
Denver Bureau

CHICAGO — Implementing a novel hospital-wide trauma approach to ST-elevation MI has enabled one major medical center to slash its door-to-reperfusion times and far surpass national standards.

The “Code STEMI” protocol was initiated at Carolinas Medical Center to streamline identification, transport, and treatment of patients with STEMI. Since its implementation, the average time from arrival in the emergency department to reperfusion has dropped to 63 minutes, Kevin M. Collier, R.C.I.A., reported at the annual meeting of the Society for Cardiovascular Angiography and Interventions.

American College of Cardiology/American Heart Association guidelines call for a door-to-reperfusion time of 90 minutes or less. However, a 2004 report from the National Registry of Myocardial Infarction concluded that only 45% of U.S. hospitals were meeting that standard.

Carolinas Medical Center is an 861-bed urban teaching hospital in Charlotte, N.C. It serves as the major referral center for a multistate 29-county area. About 105,000 patients pass through its ED annually. It serves as the major referral center for a multistate 29-county area. About 105,000 patients pass through its ED annually.

The Code STEMI protocol utilizes a hospital-wide trauma approach to STEMI, then goes straight to the cath lab for primary percutaneous coronary intervention (PCI), said Mr. Collier.

“On-code call” is activated. This triggers simultaneous pages to all members of the Code STEMI team: the cardiologist on call, the coronary care unit, the cardiac cath lab, the radiology and respiratory medicine departments, the hospital lab, and bed management. Upon arrival at the ED, the patient undergoes expedited triage to confirm the diagnosis and transmit the results from the field to an emergency physician at the hospital. If the physician determines the patient has a STEMI, the Code STEMI is activated. This triggers simultaneous pages to all members of the Code STEMI team: the cardiologist on call, the coronary care unit, the cardiac cath lab, the radiology and respiratory medicine departments, the hospital lab, and bed management.

He presented a retrospective study involving 114 consecutive STEMI patients treated at the hospital since Code STEMI was launched in October 2004 and a control group of 62 STEMI patients treated by primary PCI in the prior 9 months.

The mean door-to-reperfusion time for patients transported by paramedics dropped from 72 minutes to 54 minutes with Code STEMI. For patients not transported by paramedics, door-to-reperfusion time fell from 116 to 74 minutes.

Despite considerable progress in the treatment of acute MI in recent years, cardiogenic shock continues to occur in 7% of cases. Mortality remains high—roughly 50%—despite the use of intravenous balloon pumps, emergency revascularization, and inotropes, the current standard of care.

This was the impetus for the AB5000 extraCorporeal Ventricular Assist device (VAD) resulted in an impressive survival rate in such patients. Moreover, native cardiac function was restored in two-thirds of survivors.

More than native cardiac function was restored, she noted in an inter- verview. This study involved 26 centers and included everyone in the U.S. who received an AB5000 as a bridge-to-recovery device between October 2003 and July 2005.

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“This was not a selected best-practices approach, but a selected group of patients,” she noted in an inter- verview. The study involved 26 centers and included everyone in the U.S. who received an AB5000 as a bridge-to-recovery device between October 2003 and July 2005.

She presented national registry data showing that temporary use of the Abiomed system (VAD) resulted in an impressive survival rate in such patients. More than two-thirds of patients required biventricular support. The “Code STEMI” protocol utilizes a hospital-wide trauma approach to STEMI, then goes straight to the cath lab for primary PCI, said Mr. Collier.

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