Strategies for Optimizing Care for STEMI Patients

Implementing five strategies to reduce mortality and readmission rates for acute myocardial infarction at Evanston Hospital.

BY CARL L. TOMMASO, MD

The use of percutaneous coronary intervention in patients with ST-elevation myocardial infarction (STEMI) has created a significant improvement in overall mortality of acute myocardial infarction (AMI). Most STEMI patients are now discharged from the hospital within 2 days, with little residual morbidity from their AMI. Over the last decade in our institution, a Door-to-Balloon Committee has identified protocols to recognize AMI patients and has created systems to alert the cardiac cath lab personnel and educate emergency department personnel in order to provide prompt and appropriate identification and treatment of patients with STEMI. The Door-to-Balloon Committee met regularly, reviewed outliers and inappropriate cases, and was able to shorten door-to-balloon times and optimize care across our system. Having believed that we had achieved our goal with acute STEMI care, we turned our attention to goals to reduce readmissions and long- and short-term mortality from coronary artery disease based on five strategies described by Bradley et al.[1]

STRATEGIES TO ENHANCE STEMI CARE

In a 2012 article on AMI mortality, Bradley et al noted a twofold difference in 30-day standardized risk mortality rates across American hospitals.[1] To this end, they evaluated hospitals in the top 5% against those in the lower 5% and found five strategies that were employed by sites that reported low mortality rates.

These strategies included (1) having a physician and nurse champion for patients with AMI; (2) follow-up communication between cardiology, the emergency department, and emergency medical services (EMS); (3) creative problem solving, including involvement of senior hospital administration to understand and support clinical issues and initiatives; (4) having nurses dedicated to the cath lab rather than cross-trained in other areas of the hospital; and (5) having a pharmacist's rounding on all AMI patients in the hospital.

Experience at Evanston Hospital

The Yale School of Public Health began a study in 2014 called Leadership Saves Lives, which used 12 hospital systems involved with the Mayo network to implement the previously mentioned five strategies in an attempt to reduce cardiac mortality from AMI. Evanston Hospital was one of the sites chosen for this study.

Because Evanston Hospital already had a very low mortality rate from AMI, we expanded the goal to improve mortality rates and readmissions. Of the five strategies, we already had dedicated nursing staff in the cath lab without cross-training staff from other hospital areas.

Members of the existing Door-to-Balloon Committee, who already had experience in developing protocols and training staff, easily filled the role of physician and nurse champions for STEMI. With their knowledge, they were able to help and direct other staff to streamline and optimize our door-to-balloon process. By identifying champions, staff knew who to talk with if they had questions, which identified problems and allowed for suggestions in improving care.

Through the Leadership Saves Lives process, we formed a hospital-wide committee that included all disciplines involved in the care of STEMI patients. Hospital administrators regularly attended committee meetings, which facilitated recognition of problems and participation in problem solving that regularly occurred. It also formed a line of communication that did not exist prior to the initiation of this project.

Communicating with EMS providers posed a challenge because face-to-face meetings or conferences that involved EMS providers would be difficult to organize and time consuming. To address this issue, we developed a document that was emailed to the station of the responding EMS providers. This document included a copy of the diagnostic electrocardiogram, a description of pre- and postcatheterization care, pre- and postintervention angiogram images, and a description of the patient's hospital course and discharge medications. This was and still is well received by the EMS providers and provides encouragement and positive feedback.

The involvement of pharmacists in the care of STEMI patients was extremely important. Their rounding on AMI patients was essential in terms of patient education and compliance with medication in order to reduce readmissions. The additional task of having pharmacists physically rounding on patients during their hospital stay was difficult to implement. Therefore, we undertook a strategy of virtual pharmacy rounds on AMI patients. Through our electronic medical record, we were able to compile a list of all patients admitted with a diagnosis of AMI, which was reviewed daily by a pharmacist who ascertained appropriate medications, identified drug interactions, and developed literature on medication for patients to take home at the time of discharge. The pharmacists communicated with the attending cardiologist about appropriate medication doses and whether additional doses of medication were required.

SUMMARY

During the period of the implementing the aforementioned strategies described by Bradley et al,[1] we noted a 25% reduction in readmissions for STEMI patients. We believe that this was a cumulative effect of these strategies and not attributable to one certain strategy. The integration of these strategies coalesced multiple disciplines into an effective method of enhancing STEMI care. ■

1. Bradley EH, Curry LA, Spatz ES, et al. Hospital strategies for reducing risk-standardized mortality rates in acute myocardial infarction. Ann Intern Med. 2012;156:618-626.

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