

Simple strategies boost use of guidelines to treat chest pain

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A three-pronged intervention in Brazilian public hospitals significantly improved physician adherence to evidence-based protocols for treating acute coronary syndrome (ACS) – a type of disease causing chest pain from reduced blood flow to the heart, according to research presented today at the American College of Cardiology's 61st Annual Scientific Session. The Scientific Session, the premier cardiovascular medical meeting, brings cardiovascular professionals together to further advances in the field.

With Brazil's rapid economic growth and urbanization, cardiovascular disease, especially ACS, has supplanted infectious diseases as the nation's No. 1 killer. The Ministry of Health funded this study of a simple, low-cost strategy designed to increase use of Brazilian Society of Cardiology guidelines for ACS, which closely resemble ACC/American Heart Association guidelines. The study's strategies raised the rate of total adherence to guideline protocols by 18 percent.

"Guideline therapies work if given to the right patients in time, yet studies highlight gaps between guidelines and what physicians do in practice – not just in Brazil but in the U.S., Europe, Australia, and elsewhere," said Otavio Berwanger, MD, PhD, director of the Research Institute HCor at the Cardiac Hospital of São Paulo and co-chair of the study. "This matters because the CRUSADE Registry has shown that for every 10 percent increase in the use of guidelines, there is a 10 percent decrease in all-cause mortality." Brazil's guideline compliance is only slightly lower than in the U.S., he noted.

The six-month study was limited to public hospitals because in Brazil's free national health system, [public hospitals](#) serve about 70 percent of the population. The participating sites, 17 sites in the intervention arm and 17 in the control arm, were general tertiary care hospitals located in major urban areas, representing a broad range of ACS care capacities. Characteristics were well balanced between the groups. Some 65 percent of participating hospitals had their own chest pain protocols for the emergency department.

The intervention consisted of three strategies: nurse case management, reminders, and educational materials. Each hospital selected one or two nurses to act as case managers and follow all patients from admission to discharge. Like the intervention itself, the reminders had three components: a checklist based on national standards; a patient chart label color-coded to denote a scale from no chest pain to severe pain; and colored patient bracelets matched to the [chest pain](#) scale.

Nurse case managers triaged patients, assigned color codes and updated charts. As coordinators of patient care, nurses became part of the reminder system as well; for example, they checked with physicians if they noticed that a patient was not taking aspirin.

"Reminders are powerful tools to change behavior, and active interventions that involve the physician in decision-making are more effective than passive interventions such as posters," Dr. Berwanger explained.

Each physician also received educational materials that included ACS guidelines, directions to a website where they could consult lectures about updates to ACS practice, and a pocket-sized copy of major ACS recommendations.

Data for 1,150 ACS patients were collected and analyzed by independent

research coordinators and statisticians using an electronic data-capture system. The primary endpoint was 100 percent adherence to the recommended post-ACS therapies during the critical period of the first 24 hours – the proportion of patients who received all the recommended medications suitable for them.

In the control group, only 49.5 percent of patients received all indicated medications during the critical period, compared with 67.9 percent in the intervention group – an increase of 18 percent. Although researchers saw a trend toward fewer major adverse cardiovascular events in the intervention group representing a risk reduction of 28 percent, Dr. Berwanger cautioned that larger studies are needed before definitive conclusions can be drawn about the impact of this intervention on clinical outcomes.

"I think we found an approach that changes clinical behavior in a meaningful way. This intervention is easy to apply, doesn't require a lot of technology, and can be used in low-resource settings," Dr. Berwanger said. "Our study provides a sound basis for designing a larger, international study, perhaps more than 100 hospitals and 10,000 patients, to know if we're doing something that really improves patient outcomes."

Provided by American College of Cardiology

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