

Studies may show how to close the gap between women and men who suffer heart attacks

May 6 2009

Age, condition and treatment delay are among the reasons women who undergo angioplasty for heart attack often do not fare as well as do men, according to two studies presented today at the Society for Cardiovascular Angiography and Interventions (SCAI) 32nd Annual Scientific Sessions. These studies, which are among the first to document outcomes in female patients treated with angioplasty and stenting for a heart attack, may help close the outcome gap between women and men.

The studies found, when compared with their male counterparts, [women](#) undergoing angioplasty for [heart attack](#) are often older (by an average of nine years), in poorer condition (such as suffering from diabetes) and have a longer onset due to delayed recognition of symptoms by both patients and their caregivers. In addition, women are less likely to develop brisk blood flow through the treated artery after percutaneous [coronary intervention](#) (PCI). As a result, women face twice the likelihood of procedural failure and an increased risk of death, according to the studies.

The studies show many people do not understand that female heart attack patients often present differently than men. Although women, like men, can experience chest pain or discomfort during a heart attack, women are somewhat more likely to have other symptoms instead, such as shortness of breath, nausea/vomiting and back or jaw pain.

"Women who have [chest pain](#) due to a heart attack often attribute it to other reasons and, therefore, come to the hospital later than men," said Itsik Ben-Dor, M.D., an interventional cardiology fellow at Washington Hospital Center in Rockville, MD. "The procedure is harder and the success rate is lower in women partly because the time is longer from the onset of symptoms to treatment with PCI."

Angioplasty and stenting are highly successful procedures for treating a heart attack, thanks to impressive improvements in devices, techniques, medications, and rapid treatment protocols.

In PCI, an interventional cardiologist makes a small puncture in the groin and introduces a slender tube, or catheter, into the femoral artery. The catheter is threaded up through the aorta and into the arteries that supply blood to the heart. After removal of the blood clot that is responsible for the heart attack, the cardiologist positions a small balloon across the remaining blockage and inflates the balloon to widen the artery. Another balloon with a stent crimped on it is positioned across the lesion and inflated, expanding and releasing the tiny metal tube that will act as scaffolding to keep the artery open.

In the first study, Dr. Ben-Dor and his colleagues analyzed data from 1,853 patients who had a type of heart attack known as ST-elevation myocardial infarction (STEMI) and were treated with PCI between 2000 and 2008. The overall success rate was 96.2%. When researchers analyzed characteristics that were independently linked to procedural failure, they found the most ominous to be lesions that were complex, calcified, widespread, or difficult-to-treat. These unfavorable characteristics hiked the risk of failure nearly fourfold. Simply being female increased the odds of procedural failure by a factor of 2.04.

PCI failure also resulted in significantly higher rates of death during the initial hospitalization (17.8% vs. 3.2%; p

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