Aspiration During PCI Improves Reperfusion

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Manual aspiration of atherothrombotic debris during percutaneous coronary intervention improved myocardial reperfusion and decreased ST-segment elevation, compared with PCI alone in a randomized controlled trial of patients with possible MIs.

After conventional PCI, 26% of patients had a myocardial blush grade of 0 or 1; but after PCI with thrombus aspiration, 17% of patients had grades of 0 or 1, reported Dr. Tone Svilaas and his colleagues, from the University Medical Center Groningen, the Netherlands. A 70% or greater resolution of ST-segment elevation was seen in 57% of the patients treated with aspiration and in 44% of the patients treated with ballooning and stent placement alone (N. Engl. J. Med. 2008;358:557-67).

Deaths and major cardiac events at 30 days were significantly related to myocardial blush grade and resolution of ST-segment elevation. At 30 days, 2% of the aspiration group and 4% of the conventional PCI group had died and 4% and 3%, respectively, had a major bleeding event. Major adverse cardiac events occurred in 7% and 9%, respectively.

All patients can potentially benefit from aspiration, they said. "Our data show that angiographic variables such as TIMI flow or the presence of visible thrombus are not predictors of patients in whom aspiration will be effective."

In a commentary accompanying the report, Dr. George W. Vetrovec said thrombus extraction is "conceptually sound and appears to reduce the risk." In an interview, however, Dr. Vetrovec of the Virginia Commonwealth University, Richmond, Pauley Heart Center expressed concern about the impact of the additional process on door-to-balloon time. Although aspiration has not increased door-to-balloon time in his personal experience, widespread use might be associated with longer times, and that possibility needs to be evaluated, he said.

For their study, Dr. Svilaas and his colleagues enrolled 1,071 consecutive patients with a possible MI with ST-segment elevation seen at the center during 2005-2006. All had symptoms lasting more than 30 minutes, an onset lasting less than 12 hours, and an ST-segment elevation of more than 0.1 mV in two or more leads on ECG. The mean age of the patients was 63 years, and about 70% were male.

Patients were randomized prior to angiography. All had a guidewire introduced through their occlusion. The patients who received aspiration PCI had a 6-French Export Aspiration Catheter (Medtronic) advanced into the coronary segment during continuous aspiration.

The median time from baseline to postprocedural ECG was 44 minutes for the aspiration group and 43 minutes for the conventional PCI group.

An examination of the aspiration contents indicated atherothrombotic material was present in 73% of the 454 aspiration cases examined. The contents consisted of platelets alone in 68% of cases, a thrombus with bands of erythrocytes in 15% of cases, and a thrombus with various components in 17% of cases. ■

CABG Bests Drug-Eluting Stents in Multivessel Disease, Registry Shows

Coronary artery bypass grafting produces better outcomes than drug-eluting coronary stents do in patients with multivessel disease, according to a database study.

Given recent reports of the danger of late stent thrombosis with the drug-eluting devices, it wasn't clear "whether the relative outcomes reported in earlier studies that compared coronary artery bypass grafting (CABG) with coronary stenting are reflective of current practice." Most of those studies were done comparing CABG with bare metal stents.

So Dr. Edward L. Hannan of the State University of New York at Albany and his associates used public health databases to compare outcomes between 9,963 state residents who received multiple drug-eluting stents via percutaneous coronary intervention and 7,437 who underwent CABG between October 2003 and December 2004. They followed all subjects through the end of 2005 and presented their report in the Jan. 24 issue of the New England Journal of Medicine.

Patients who received stents had a lower survival rate at 18 months (93%) than did those who underwent CABG (94%), as well as lower rates of the combined end point of freedom from MI or death (88% vs. 92%, respectively).

Outcomes were superior with CABG regardless of whether patients had proximal left anterior descending artery disease. And there was a trend favoring CABG in three high-risk subgroups of patients: those with diabetes, those with left ventricular ejection fractions below 40%, and those aged 80 and older, Dr. Hannan and his associates said (N. Engl. J. Med. 2008; 358:331-41).

In an accompanying editorial comment, Dr. Joseph P. Carrozza Jr. of Harvard Medical School, Boston, said, "The New York state registries are a sobering reality check for those who hoped the benefits of drug elution would level the playing field between CABG and stents." Instead, the results "affirm that CABG remains the standard of care for patients who require multivessel coronary revascularization," he said (New Engl. J. Med. 2008;358:405-7).

—Mary Ann Moon